ENGINEERING NEWS-RECORD

- ▶ [illegible] to new designs [illegible]
- ▶ Water is purest ever for nuclear reactor [illegible]

Blockhouse shields Canaveral rocke

E B POWER
G
UNIVERSITY MICROFILMS
313 N 1 ST
ANN ARBOR MICH

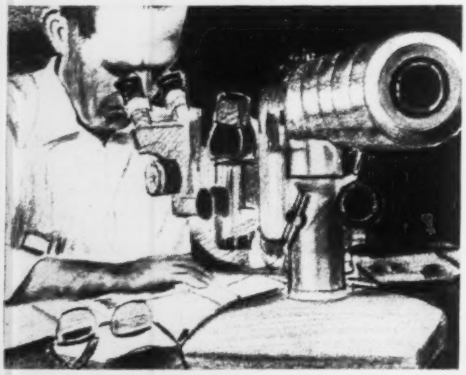
A McGRAW-HILL PUBLICATION

ATED SALT WATER
CORROSION WEIGHT LOSS
200
150
100
50
0
1
2
3
4
5
6
7
8
TIME WEEKS

A Byers field service representative can relate new 4-D Wrought Iron test results to the specifier's corrosive applications.

Laboratory and field test results lend added support to 4-D Wrought Iron specs

Our metallurgical staff compiles and analyzes great funds of data on corrosion-resistant materials.



With some products, a company representative's natural enthusiasm is often *tempered* by actual test results in the laboratory.

Not so however, with new 4-D Wrought Iron. Byers field service engineers can present research facts which confirm the increased corrosion-resistance of this new product.

Comparative testing with standard Wrought Iron, as well as many ferrous substitutes, proves new 4-D Wrought Iron a decidedly superior deterrent to corrosion. So the wisdom of standard Wrought Iron specifications may now be further enhanced by specifying new 4-D Wrought Iron.

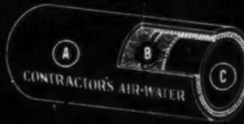
Byers field service engineers are lending even more credibility to this story with their own knowledge of corrosive infighting. The Byers representative will welcome an opportunity to relate these test results to your corrosive applications. Call him soon. Or, write us for helpful literature on new 4-D Wrought Iron. A. M. Byers Company, Clark Building, Pittsburgh 22, Pa.

BYERS WROUGHT IRON

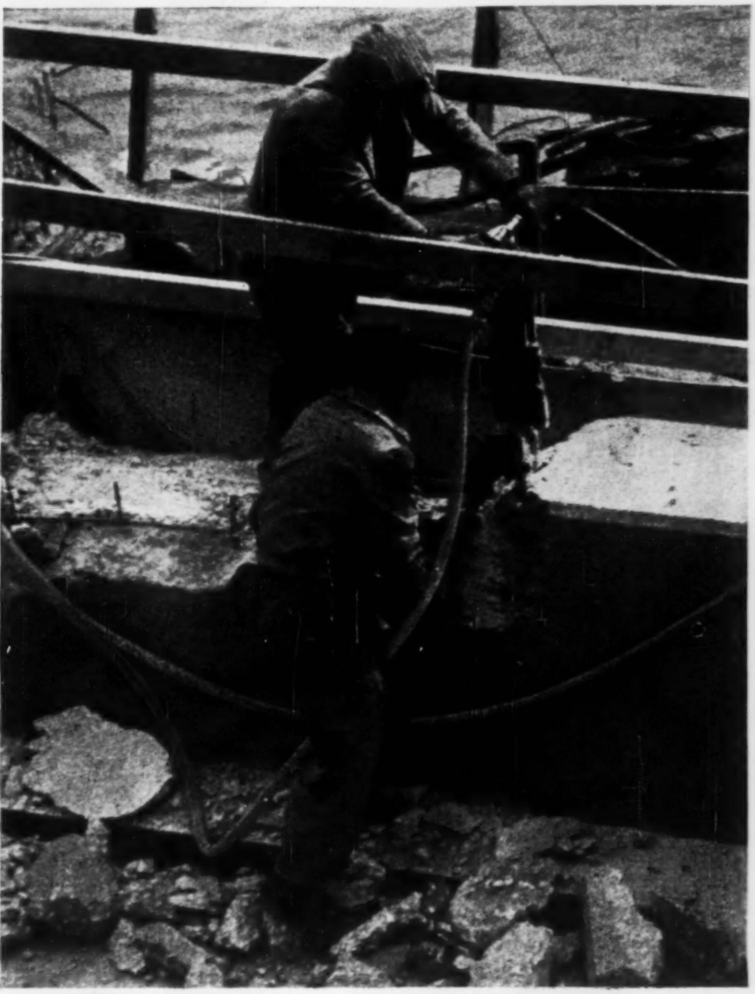
GOODYEAR INDUSTRIAL PRODUCTS

G.T.M.-Specified

Contractor's Air-Water Hose for Construction Work



- **A** Rugged cover that's both abrasion- and sun-resisting—continuously print-branded for easy identification
- **B** Extra-tough braids of high-tensile rayon cord to handle pressures, resist crushing or kinking
- **C** Special nonporous tube resists alkali or slightly acid water



Now—a hose that's built for builders

Say good-by to the big inventories of both air hose and water hose most big construction jobs always required. Here, in a new kind of hose that handles the jobs of either one – you have the means of wiping out time-eating handling as well as profit-eating costs.

Goodyear and the G.T.M. – Goodyear Technical Man – developed and built this hose just for contractors. As an air hose, it accommodates pressures up to 200 psi. Or, as a water hose, it's ideal for filling, supply and wash-down service. And it's available in continuous lengths up to 500 feet (in the ½-inch size).

What's more, it gives you the super-toughness any contractor's hose must have. Muscular, high-tensile rayon cord reinforcements handle the high pressures and resist kinking or crushing – yet give you exceptional flexibility for easy handling. And an extra-tough cover resists abrasion, weathering, or any other kind of punishment construction work usually dishes out.

Wouldn't it pay *you* to look into this great new hose? It's one of more than 800 Goodyear hoses designed for every hose job. And they're all available through your Goodyear Distributor—or by writing Goodyear, Industrial Products Division, Akron 16, Ohio.

IT'S SMART TO DO BUSINESS *with your Goodyear Distributor. He can give you fast, dependable service on Hose, V-Belts, Flat Belts and many other industrial rubber and nonrubber supplies. Look for him in the Yellow Pages under "Rubber Goods" or "Rubber Products."*

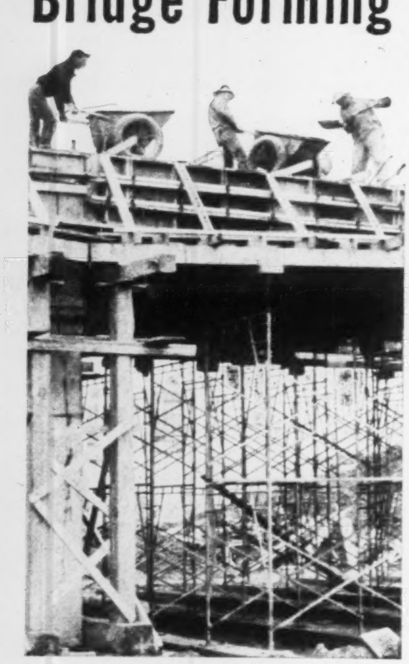
CONTRACTOR'S AIR-WATER HOSE by

GOODYEAR

60th GOOD YEAR ANNIVERSARY

THE GREATEST NAME IN RUBBER

Bridge Forming



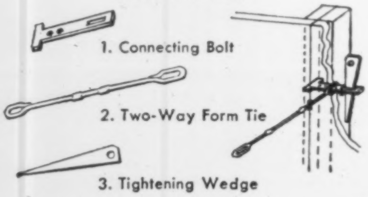
Symons Forms Cut 100 Days Off Bridge Forming Job

Ease of Erecting and Stripping Reduces Pouring Time

Contractor Lee Hoffman, Beaverton, Oregon, was given 320 days to pour 4,000 cubic yards of concrete for a bridge over Myrtle Creek in Oregon. Job was complete in 220 days or only ⅔ the time allotted.

Harry Pajutte, Chief Engineer for Hoffman, credits the ease of erecting and stripping Symons Standard High Strength Forms with contributing substantially to cutting pouring time, reducing number of men required on job, and providing greater mobility for the pouring equipment. Only

JUST 3 PIECES



3,144 square feet of panels were required for the 160,000 square feet of forming.

Symons Forms, Shores and Column Clamps can be rented with purchase option. Facts on Symons products and engineering service available upon request.

Symons

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Chicago 39, Illinois

ENGINEERING NEWS-RECORD

EIGHTY-FOURTH YEAR OF PUBLICATION

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What's YOUR TRUCK CRANE JOB?

NORTHWEST
25 Ton – 35 Ton TRUCK CRANES

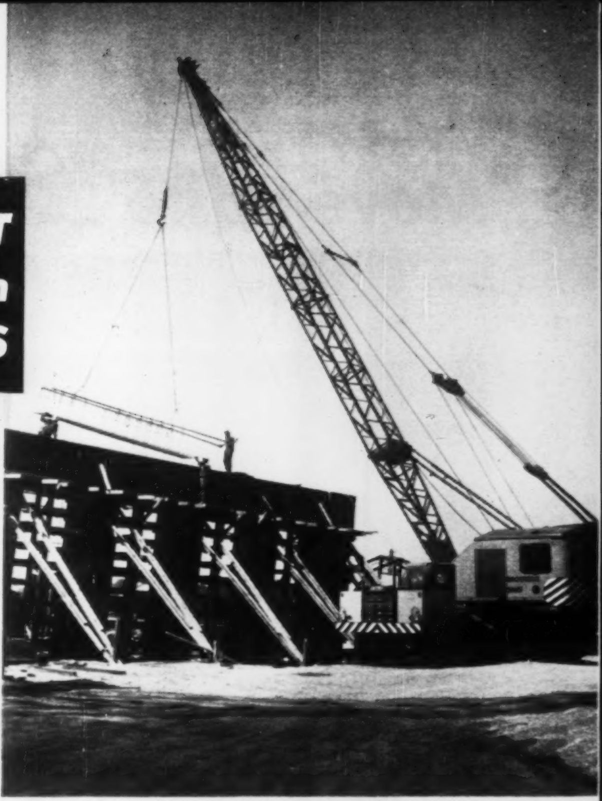
ALL OVER THE COUNTRY — from California to New England — from Minnesota to the deep South, Northwest Truck Cranes are proving their versatility in handling jobs of all kinds.

Here is a choice of rubber tired units that bring you a combination of advantages that make money.

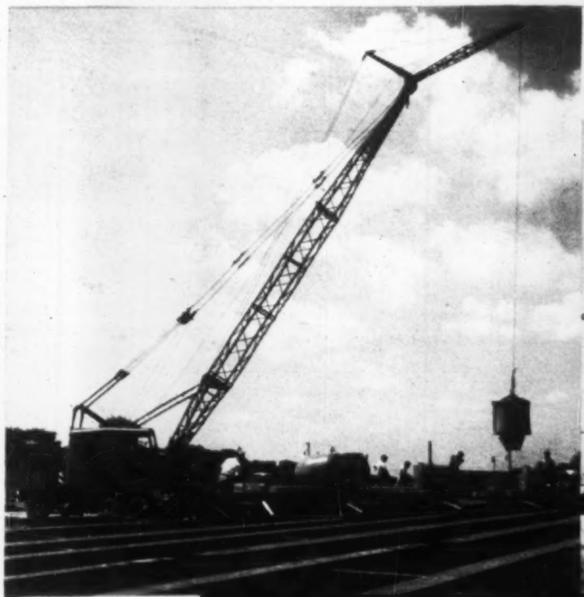
Independent High Speed Boom Hoists are ruggedly built for hour in and hour out service — power controlled in both directions and operating independently of all other machine functions, Sectional Boom Hoist Rigging and Pendant Lines, Pivoted Gantries, Telescopic Boom Struts, Adjustable Jibs, Removable Counterweight, 3rd Drums and a host of Carrier advantages all combine to permit the maximum in flexibility to get the job done quickly and profitably.

There is a lot to learn about these machines. Ask for a catalog on the size you need.

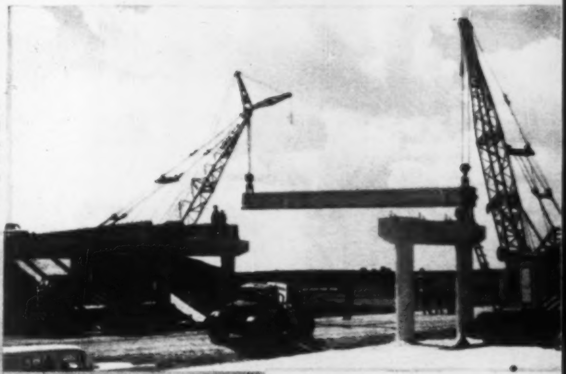
NORTHWEST ENGINEERING COMPANY
1502 Field Building • 135 South LaSalle Street • Chicago 3, Illinois



Above: Heavy steel calls for careful handling and accuracy. The Northwest is a 35 ton Truck Crane.



Left: Northwest 25 ton Truck Cranes are speeding up many concrete jobs. They bring you smooth booming, plenty of reach and perfect control of the load.



Above:
Two Northwest 25 ton Truck Cranes coordinate smoothly to set a precast concrete Beam on an overpass job.

Left:
A 35 ton Northwest Truck Crane resets a large concrete tank.

NORTHWEST *Always Ready to* **GO**

NORTHWEST EQUIPMENT IS BUILT IN THE FOLLOWING SIZES

SHOVELS	CRANES	DRAGLINES	PULLSHOVELS	TRUCK CRANES
¾ Yd. to 2½ Yd. Capacity	13-Ton to 50-Ton Capacity	¾ Yd. to 3 Yd. Capacity	¾ Yd. to 2½ Yd. Capacity	25-Ton and 35-Ton Capacity

G724C

Move up to King-size profits

LINK-BELT SPEEDER
K 370

K370 1¾-yard shovel-crane delivers 16% or more output than 1½-yard rigs

There's good reason volume producers move up from 1½ yeard shovels and draglines to Link-Belt Speeder 1¾ yard machines and write new production records. Here's why:

1. 16% more bucket capacity offsets the slight added cost of "buying up" to the 1¾ yard K-370.

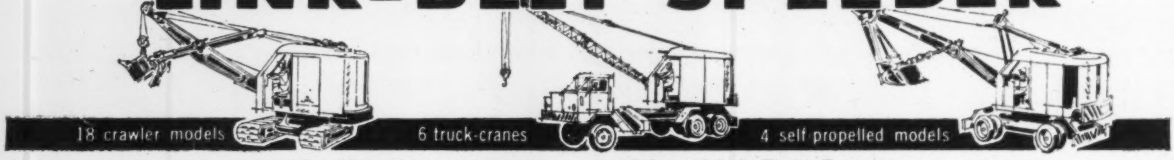
2. Fast—maneuverable as many smaller machines because of Speed-o-Matic power hydraulic controls and hydraulic power steer.

3. Produces as much as many 2-yard rigs because of the power hydraulic controls and bonus usable horsepower.

Move up to a 1¾ yard K-370 . . . cut your per yard cost . . . improve your competitive position . . . put yourself in line for King-size profits.

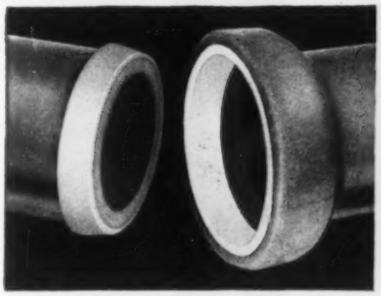
For details on the K-370 and its 3-yard mate (K-608) see your distributor or write Link-Belt Speeder Corporation, Cedar Rapids, Iowa. 14,898

LINK-BELT SPEEDER



It's time to compare . . . with a Link-Belt Speeder

lower installation costs FIVE WAYS with longer, stronger AMVIT Clay Pipe



Outstanding Mechanical Joint of Plasticized Resins of Polyvinyl-Chloride Gives Lower Cost-In-Place

A million dollar expansion program to increase production facilities for Amvit* was completed earlier this year. New horizontal extrusion machines now manufacture pipe in over four feet lengths.

Longer lengths lower installation costs, reduce the number of joints, lessen the number of pipe sections to be handled. *Here's how you can save on installation with Amvit:*

1 SAVES LABOR

No other materials such as caulking, joint compounds, hot pots or ladles are needed to make the Amvit Joint. The joint is on the pipe delivered to the job ready for use. Nothing else is needed. Just push the pipe together and the joint is complete.

2 IMMEDIATE BACKFILLING

As soon as the joint is made, backfilling can start. No need to wait for unnecessary delays caused by bad trench conditions, high-water table, unstable ground or running sand. Barricades can be removed and streets opened days sooner.

3 QUICK TESTING

No need to wait days to see if a line has passed test. A look at the completed joint will tell. Thus, engineers can inspect and accept the line allowing the contractor to receive payment quicker.

4 PERMITS DEFLECTION, ABSORBS SHOCKS

Amvit is made from a plastic which has many characteristics similar to rubber. It is pliable, permitting deflection without leakage. It is resilient, can absorb shock and vibration. This allows for settlement of pipe in poor ground conditions after backfilling.

5 COMPLETE FITTINGS

Amvit is furnished on all standard fittings, as well as pipe. This will permit a uniformly tight line from house wall to treatment plant.

For more information on how Amvit can help cut your sewer project costs, write or call American Vitrified Products Company, National City Bank Building, Cleveland, Ohio, or our office nearest you.

Amvit line being installed in Amherst, Ohio

*T. M. Registered.

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AMERICAN

American Vitrified Products Company
CLEVELAND OHIO

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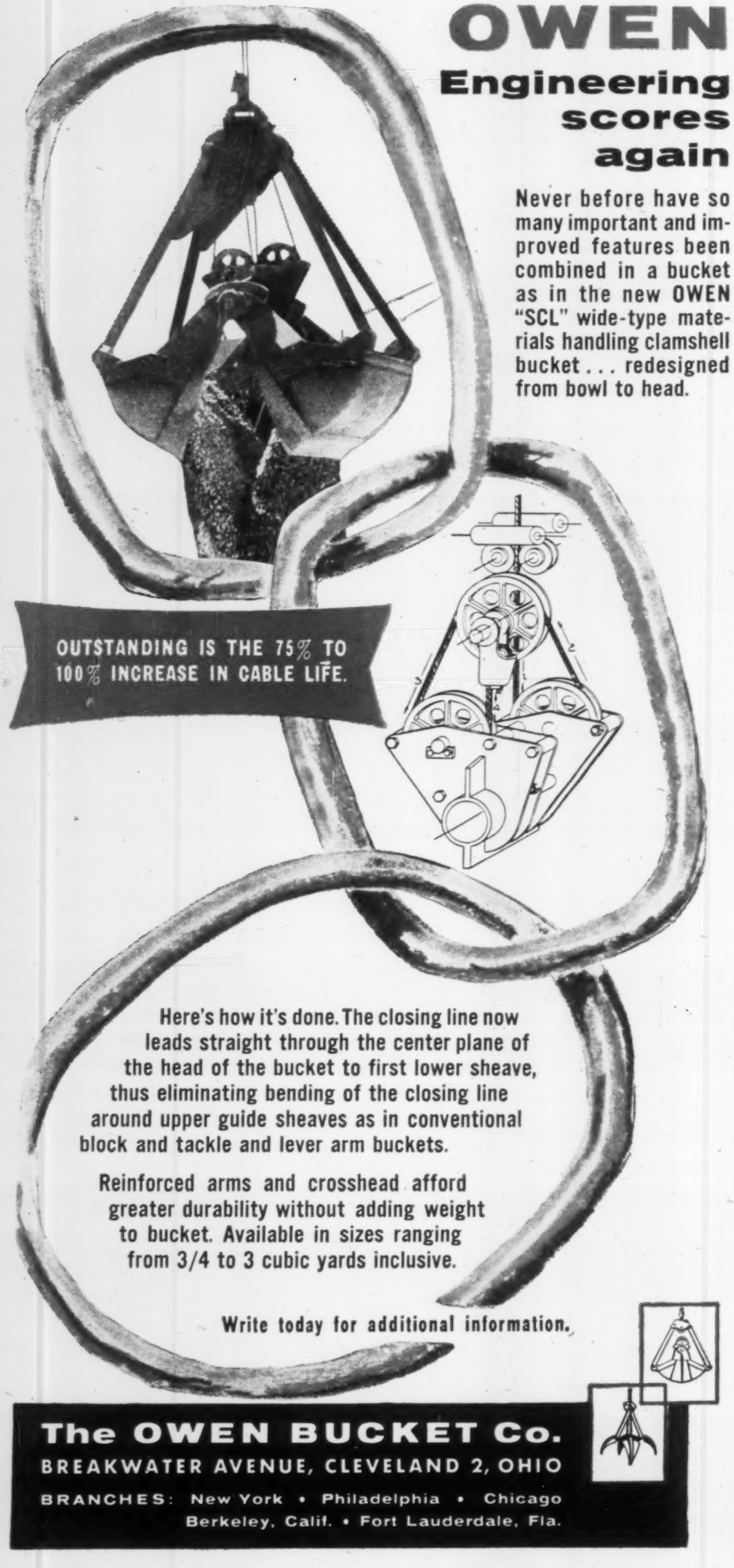

OWEN
Engineering scores again

Never before have so many important and improved features been combined in a bucket as in the new OWEN "SCL" wide-type materials handling clamshell bucket . . . redesigned from bowl to head.

OUTSTANDING IS THE 75% TO 100% INCREASE IN CABLE LIFE.

Here's how it's done. The closing line now leads straight through the center plane of the head of the bucket to first lower sheave, thus eliminating bending of the closing line around upper guide sheaves as in conventional block and tackle and lever arm buckets.

Reinforced arms and crosshead afford greater durability without adding weight to bucket. Available in sizes ranging from 3/4 to 3 cubic yards inclusive.

Write today for additional information.

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Reader Comment

The Government Engineer

SIR—"Problems of Professional Engineers in Federal Jobs" by R. W. Johnson (ENR Mar. 6, p. 42) was particularly interesting since it covered a broad, controversial subject from the viewpoint of all engineers.

The value of the many sound thoughts expressed by Mr. Johnson is, in my opinion, minimized by the inclusion of many incorrect and misleading statements. The general tone of the article reflects that the professional engineer in the government service is underpaid, underprivileged and unrecognized in the Corps. I would like to comment only on two of the points discussed in Mr. Johnson's article: professional registration and job classification

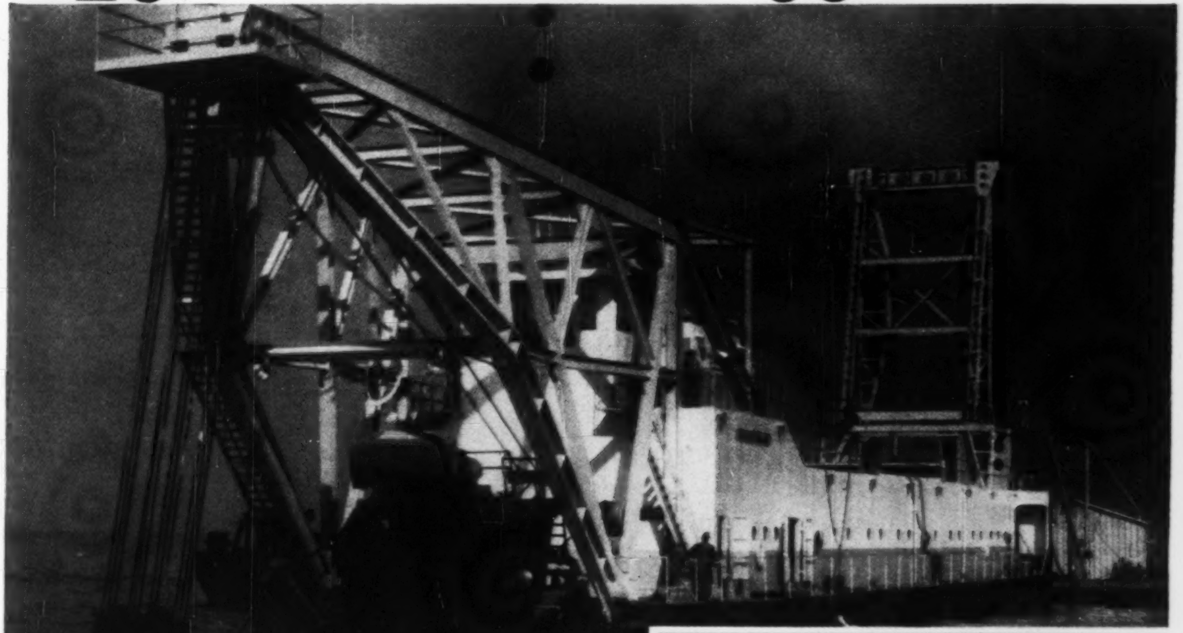
The Corps of Engineers actively encourages registration of professional engineers. In the Garrison District, virtually all key supervisory engineering personnel, the executive officer and I are all registered professional engineers. Many of the non-supervisory engineers are either registered or preparing for registration examinations. Registration is a "badge of distinction" and should certainly be a personal goal of every qualified engineer. It should be noted that registration, as such, does not make an engineer either more capable or more productive.

The government has long been an advocate and user of job classification for organizational control. Contrary to the impression set forth by Mr. Johnson, engineer positions in the Corps are described in writing by an engineer supervisor. Once the job description is placed in final form by the Personnel Branch, the supervisor must review it and indicate his concurrence by signature before it becomes effective. If the duties are not correctly described, the responsibility rests with the employee and his supervisor, no one else.

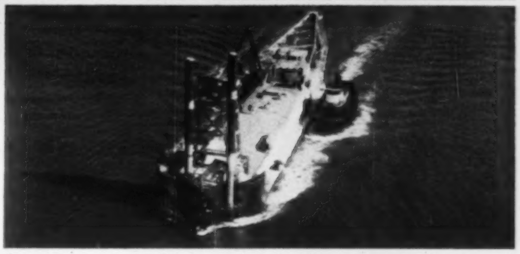
The job described is allocated a grade level based on the duties and responsibilities depicted, to reflect its relative importance. In this manner, the engineer is paid on the basis of what he is required to do, rather than on what he is capable of doing. The latter problem

Engineering News-Record welcomes expression of opinions from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance. Letters should be addressed Editor, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

26 MILLION YARDS IN 30 MONTHS



The 207′ long *Franciscan* digs 50′ deep with ladders at 45°—pivots on two 80′ spuds. 8,000 hp AC synchronous motor driven pump — 36″ intake, 30″ discharge.

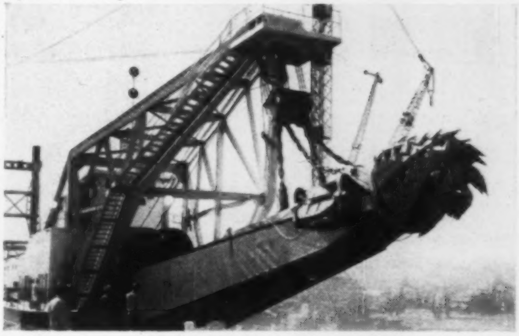


Seagoing stern provides easy job to job movement. It's powered from shore, but designed for installation of on-board power plant.

YUBA HYDRAULIC DREDGE

HALF A CENTURY OF DREDGE DESIGN, FABRICATION, MINING AND EARTHMOVING EXPERIENCE

9′ cutter head powered by 1,500 hp DC motor, tears tough abrasive Alameda sand deposits never before so successfully handled by a hydraulic dredge.



Built by Yuba for Utah Construction Company, the *Franciscan* has been placing fill for a large Alameda shoreline community development, and for the huge Metropolitan Oakland International Airport expansion. According to John Yasich, internationally known expert and manager of Utah's dredging operations, and Utah Engineer Jack Mednick, this biggest dredge in the West has been doing an unusual job. Whether you're looking for 8″ or 30″ hydraulics—large or small clamshells or bucket ladders—or modernization of present equipment—consult Yuba first.

YUBA MINING DIVISION

YUBA

DREDGES • JIGS • TROMMELS • ROTARY FEEDERS
DREDGE PARTS • SCREEN PLATES • SLURRY PUMPS
CUSTOM ORE HANDLING EQUIPMENT

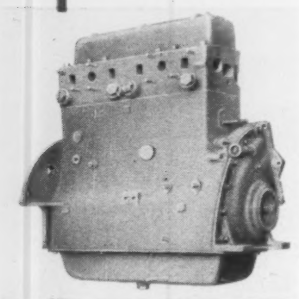
675 EAST H STREET • BENICIA, CALIFORNIA

YUBA CONSOLIDATED INDUSTRIES, INC.

CONTINENTAL
"S" Assemblies Save Money in the CONSTRUCTION INDUSTRY

Good news for every user of construction equipment with Continental power! All models in the Continental line of industrial engines are now available in "S" Assembly form—basic engine unit complete with cylinder-and-block assembly, oil pan, cylinder head, piston and valve assemblies, crankshaft, camshaft, gear cover, bearings and caps, crank and cam gears and front end plate, fully assembled and torqued to specifications.

"S" Assemblies usually cost less than full overhaul, and they install in a fraction of overhaul time. And since the "S" Assembly embodies the latest results of Continental's continuing research, as regards both materials and design, it enables you to keep the very latest model on the job at all times.



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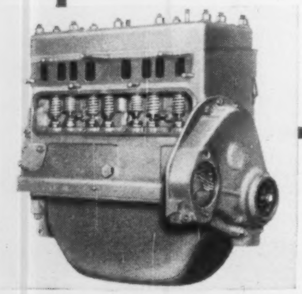

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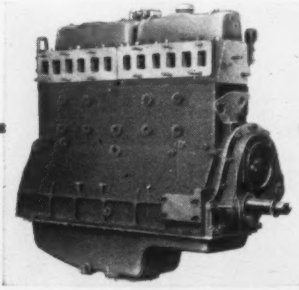

OVERHEAD VALVE

ASK YOUR EQUIPMENT DEALER ABOUT "S" ASSEMBLIES
OR WRITE THE FACTORY FOR INFORMATION

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is one of utilization; not job classification, and the two should not be confused. The matching of grade criteria established by the U. S. Civil Service Commission against specific duties and responsibilities is an administrative function best handled by a trained classifier, not an engineer. To assign this job to an engineer would certainly be a questionable use of technical ability, and I doubt that any capable engineer would want it.

It should be particularly noted that, in case of disagreement as to description of duties or establishment of grades, Corps District Engineers, most of whom are registered professional engineers, are the final classification authorities at the installation level. It is acknowledged that reorganizations sometimes require reclassification of positions, both in civilian industry and in the governmental service; however, the statement that positions can be regraded or changed to non-professional without the knowledge of the incumbent is not true in the Corps.

As a matter of general information, I believe that any inference that Mr. Johnson is now working for the Corps of Engineers is incorrect. It would appear from the statements made that he is currently in the employ of the U. S. Army Europe, rather than the Corps.

Lynn W. Pine
Colonel, CE
District Engineer, Garrison
Riverdale, North Dakota

•

Sir—Let me compliment R. W. Johnson for his fine article on the "Problems of Professional Engineers in Federal Jobs" (ENR Mar. 6, p. 42). Mr. Johnson, so far as he went, presented the case ably. However, since he is still in the federal civil service it seems quite likely that he is unable to express himself as forcefully as he might otherwise. This, incidentally, is no reflection on Mr. Johnson.

However, having recently separated myself from a GS-11 which should have been at least a GS-14 job for one of the armed forces, I feel rather more strongly about the abuses of all civilian personnel, and professional engineers in particular, by the armed forces. Frankly, I left in high dudgeon and took no pains to conceal that fact.

I found the whole military set-up entirely unsatisfactory toward the production of decent ideas or practice. I found that the civilian is simply tolerated, and criticized for breaches of so called "Rules for Military Conduct." I objected to working under an officer who was not an engineer and whose judgment on engineering matters was very

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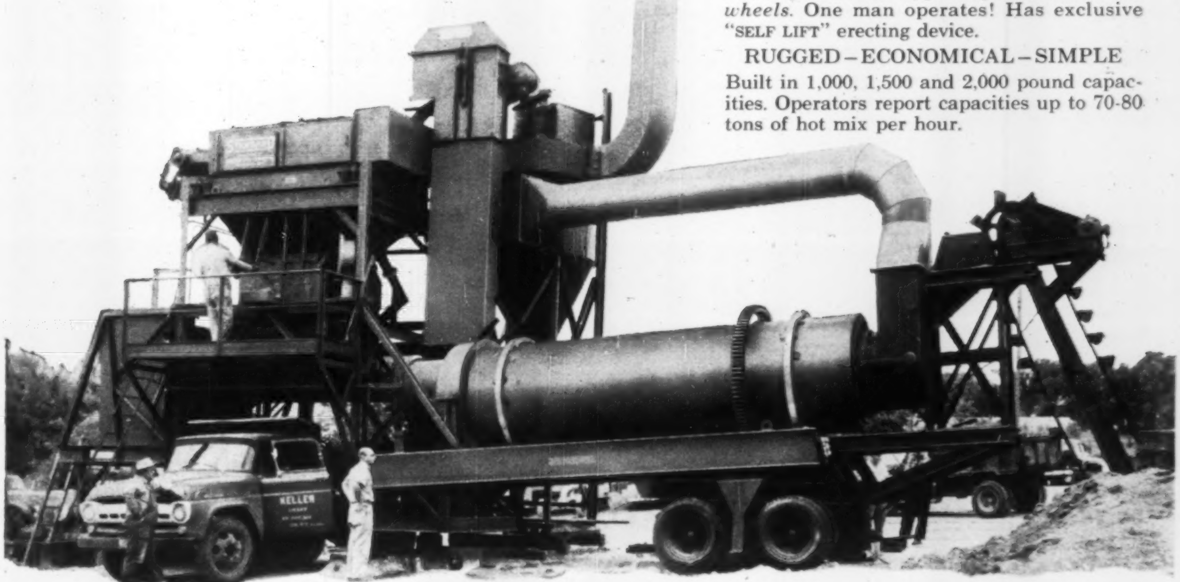
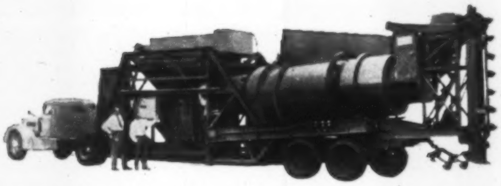


*trailer mounted

on the job...



on the way...

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STANDARD Model T-M asphalt plants offer the same rugged design features as the larger STANDARD Model R-M semi-portable asphalt plants, including: Super-Lift Dryer with Saw-Tooth Lifters... Hi-Speed Mixer, Heavy Duty Design... Simplex Pushbutton Batching Control... positive control of liquid asphalt, and complete accessibility... with everything mounted and packaged in its own rugged trailer frame. Field proven for a number of years, the Model T-M is designed for extreme portability and top capacity.

The mobile Standard Model T-M Asphalt Plant is the contractor's answer for on-the-job mixing in rural areas and remote locations. Push button erection. Complete plant can be set up and started in less than 8 hours. Here's the toughest, largest, most economical Trailer Mounted Asphalt Plant in the world.

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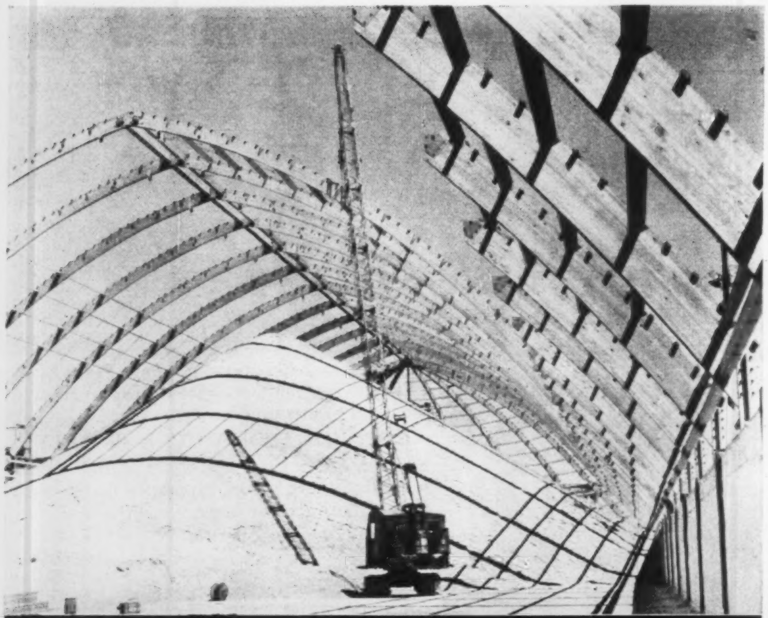
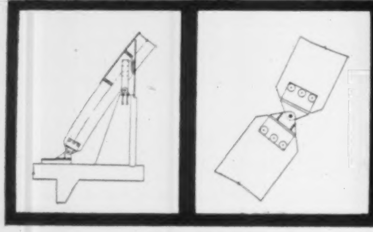
(Division of Standard Steel Corporation)

ROTARY DRYERS • KILNS • COOLERS • ASPHALT PLANTS





Above: POTASH COMPANY OF AMERICA, warehouse number 7, Carlsbad, New Mexico, is 179'-8" x 400' plus half circles of 179'-8" diameter at each end. Left: Concrete pilaster wall supports cantilevered timber buttresses. Center: Hinged connection joins timber buttress to arch.

2¼ acres of permanent low cost space . . . with glulam buttressed arches by Timber Structures, Inc.

In construction of this 2¼-acre clear span warehouse, POTASH COMPANY OF AMERICA used glulam buttresses and arches to save $60,000 over the cost of other framing. At the same time they prevented possible damage to the framing through chemical action of the stored material, for timber is inert to chemical action, and requires no special protection for use with chemical materials.

Glulam timber buttresses resting upon a concrete pilaster wall support the arches which frame the roof structure of the warehouse. By using buttresses and arches instead of continuous arches it was possible to reduce the section size of the arches, with a substantial saving in cost.

Imaginative use of timber for your wide span structures may make similar economies for you while providing permanent, maintenance-free construction. For information on engineered timber members, see our insert in Sweet's Architectural and Industrial Construction files, or consult your nearest Timber Structures representative. Also write for comprehensive brochure, "Buildings for Tomorrow", which will be sent free upon request.

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Offices in Ramsey, N. J.; New York City; Boston; Philadelphia; West Hartford; Cleveland; Charlotte; Chicago; Centerline, Mich.; Kansas City; St. Louis; Minneapolis; Des Moines; Wichita; Memphis; Dallas; Houston; Birmingham; Beverly Hills; Seattle; Spokane; Denver.
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MEMBER

SEE OUR CATALOG IN SWEET'S INDUSTRIAL CONSTRUCTION FILE OR WRITE FOR COPY

questionable. The money aspect of the job was not nearly so important to me as the working conditions, which were abominable.

The thing that concerns me, as well as Mr. Johnson, is that we are actually needed in federal service—as is evidenced by the high prices and poor construction obtained on many armed forces jobs. The high prices are due to the contractor having to bid on incomplete plans and specifications. The poor construction is usually due to poor design, or having to whittle down the original project because a few thousands of dollars are lacking for the job at hand.

It appears that it is time for a major reform in the treatment of all civilian personnel in the federal service and the professional engineer in particular. It also appears that there is absolutely no likelihood of any reform; Congress usually neglects controversial items of this nature because there are not enough votes involved to make it worthwhile to investigate and change the existing "disorder."

There is no doubt that many, many topnotch engineers and scientists are needed to carry on the business of government, and further, that if they are not secured and kept, our actual survival may be threatened.

Kenneth H. Wright, Sr.
Blue Springs, Mo.

•

Sir—Both R. W. Johnson, the author, and Engineering News-Record, the publisher, deserve commendation for the article, "Problems of Professional Engineers in Federal Jobs."

As noted by Mr. Johnson, this has long been an area of concern to NSPE. All of his six recommendations are good and are the same or similar to those advocated in Congress and the Civil Service Commission by NSPE. We would add one other, however, which is of fundamental importance: The creation, or restoration, of a separate classification and compensation schedule for professional engineers and scientists.

Paul H. Robbins
Executive Director
National Society of Professional Engineers
Washington, D. C.

Building of Belgian Steel

Sir—Inasmuch as our firm, Leon G. Rucquoi & Associates, Inc., represented the Belgian steel fabricators in the transaction which supplied 1,200 tons of columns and girders for the new composite steel and concrete building at 110 William St., New York (ENR

"TO STAY COMPETITIVE"

THIS CONTRACTOR USES A LORAIN SP-107

This Lorain SP-107 owner (name on request), plans housing developments, builds and sells homes. As a builder, he is constantly on the alert for new and better ways of doing things—for as he says: *"Only in that way can my company stay competitive."*

That's why when he first heard about the new 3/8-yard Lorain SP-107 he contacted the local Thew-Lorain Distributor to inspect this machine that could give him both profit-producing digging plus real get-around mobility. He wanted a small excavator that could be dispatched to dig small basements, put in sewer laterals and storm sewers, and be a general "handy-andy" on his larger housing projects.

Convinced the agile, high-speed Lorain SP-107 was the machine he needed, he put an SP-107 to work in November, 1957.

And, this is what he reports: "Since then, this has been a busy machine. In fact, it zips around so fast that the boys call it 'Sputnik.' We sure like the SP-107's ability to get into and out of tight places. The 'square' design gives it good balance and it is able to dig from any angle" — without setting outriggers.

Here are other SP-107 features that make it a valuable contractors' tool:

- *4-wheel drive to "go anywhere"—streets, mud, hills.*
- *4-wheel steering is available for maximum—even sideways—maneuverability.*
- *3 or 6 travel speeds — up to 15 m.p.h.*
- *Torque converter plus automatic transmission . . . gives it lots of hang on . . . won't give up when the digging or traveling is tough.*
- *Hydraulic control of all clutches . . . the Lorain SP-107 is easy, simple and fast to operate.*
- *Power steering and power brakes make the Lorain SP-107 easy, simple to handle.*

Your Thew-Lorain Distributor will be glad to demonstrate the Lorain SP-107. Find out the many ways you can use this profit-making contractors' tool.

Equipped as a hoe, the SP-107 digs straight-sided, square-cornered basements.

At the job site, 4-wheel, high traction drive and big-tire flotation roll the SP-107 in over soft, rough terrain. Maneuvers easily in tight places.
On the run between jobs — speeds up to 15 m.p.h. get the SP-107 into action faster — no hauling costs.

THE THEW SHOVEL CO., LORAIN, OHIO, U. S. A.

THEW LORAIN®

RELIABILITY IN ACTION

CARBIDE INSERT? or ALL STEEL?

We get maximum production at lowest bit cost with TIMKEN® carbide insert bits

...Reports The Bridge Construction Corporation

IMPROVING U.S. Highway 1 near Woolwich, Maine, required the removal of 152,000 cubic yards of granite. In drilling blast holes to depths of 20 feet, the Bridge Construction Corporation, of Augusta, got maximum production at lowest bit cost per foot-of-hole with Timken® *carbide insert* bits.

Timken carbide insert bits permitted increased drilling speed and fewer bit changes. They made it possible to drill out full increments of drill steel.

They're your best bet, too, for drilling in tough, abrasive ground. But carbide insert bits may not be best for every job.

When drilling in ordinary ground you'll find more economy when you use Timken *all steel multi-use* bits. With correct and controlled reconditioning, they give you the lowest cost per foot-of-hole when you can drill out full increments of drill steel.

Timken carbide inserts bits and all steel multi-use bits save time because they're interchangeable in the same thread series. They permit you to switch bits when the ground changes without changing drill steels. Both types of Timken bits have a special shoulder union that protects threads from drilling impact.

And Timken carbide and all steel multi-use bits are made from Timken fine alloy steel. We're the only American removable bit manufacturer that makes its own steel. It enables us to control quality every step of the way.

For the right bit for your particular job, call or write the Timken Rock Bit Engineering Service, The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

Timken threaded all steel multi-use rock bit

Timken threaded carbide insert rock bit

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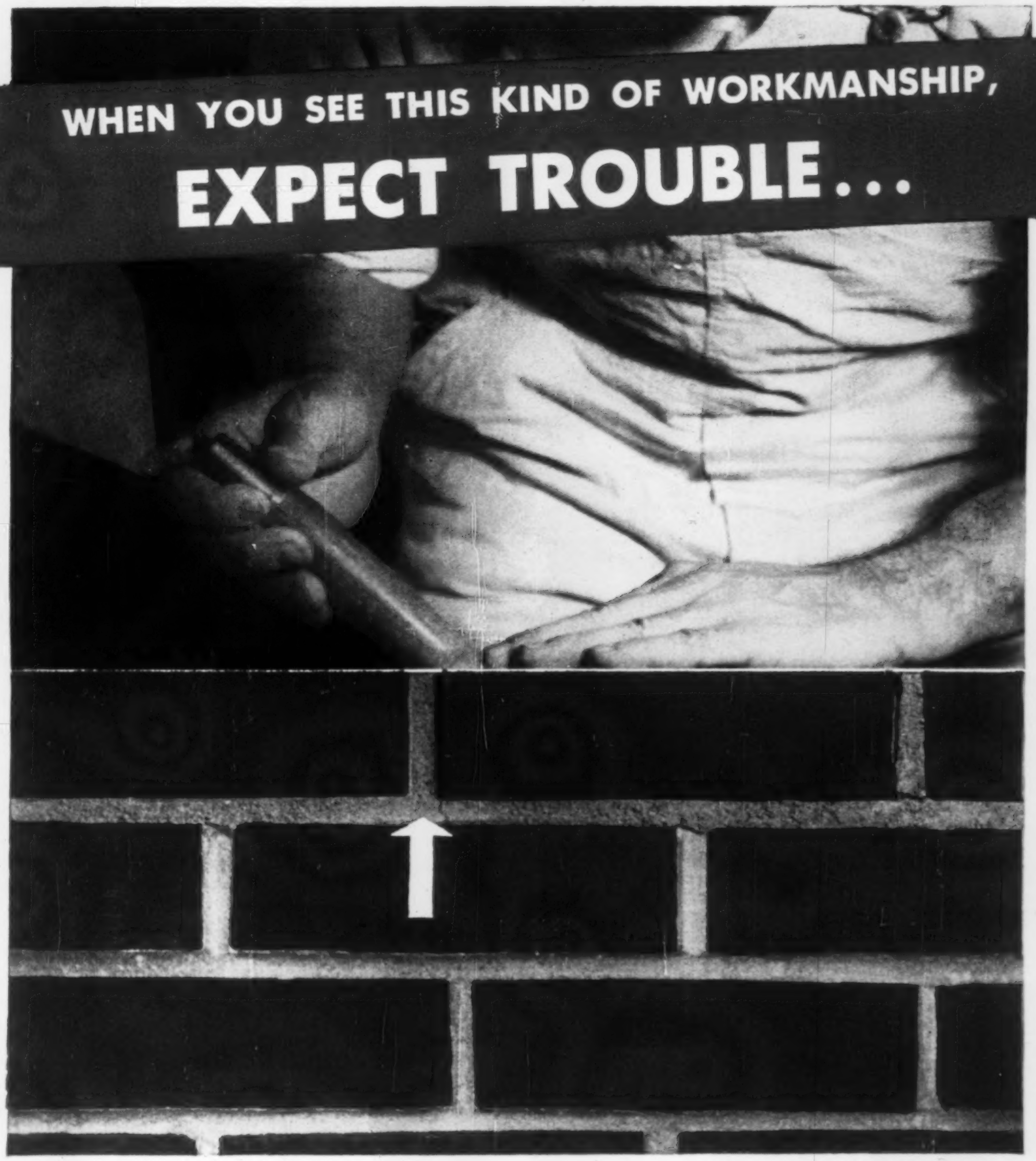
WHEN YOU SEE THIS KIND OF WORKMANSHIP, EXPECT TROUBLE...



Good workmanship is one of the most important factors in preventing leaky brick walls.

Good workmanship includes wetting the brick, securing full head and bed joints, backplastering the face brick—*and laying the brick carefully to keep the bond. The position of the brick should never be shifted after the mortar has stiffened.*

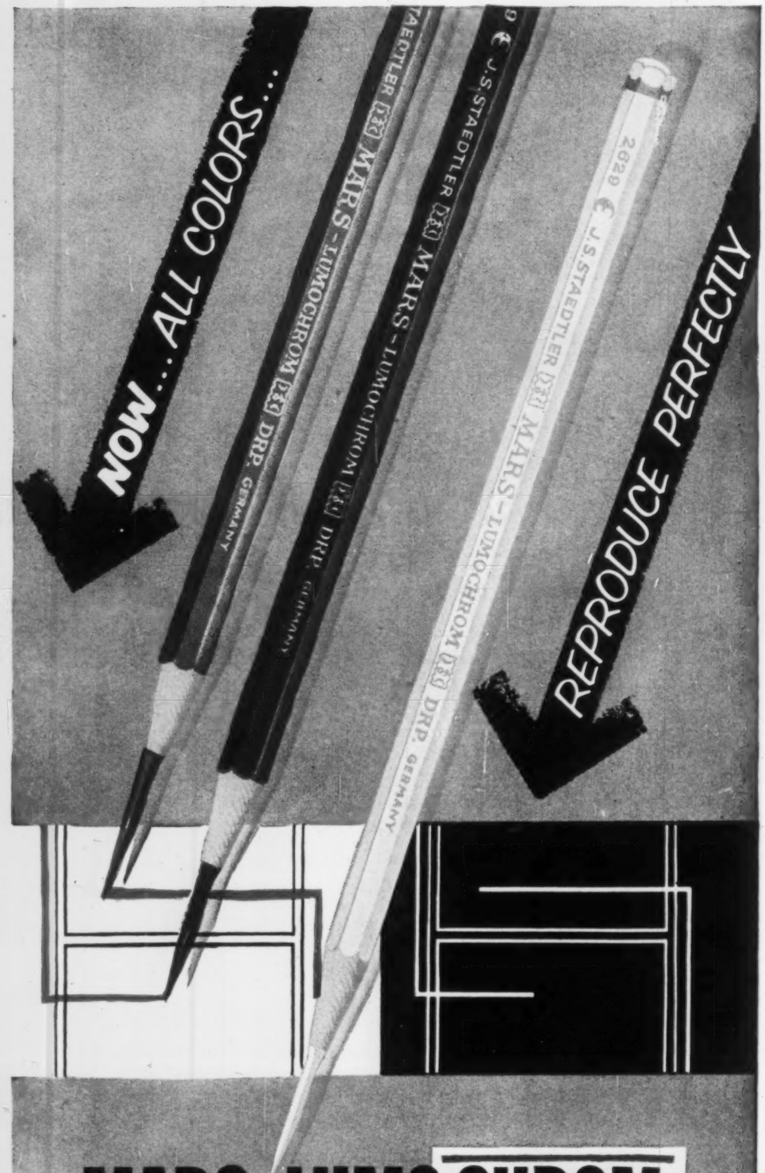
Expect trouble when brick are shifted or tapped into place after the mortar has stiffened. Cracks will result and the wall may leak.

Brixment mortar has high water-retaining capacity. It resists the sucking action of the brick. It stays plastic and workable longer. Brixment mortar therefore makes it easy for the bricklayer to lay the brick accurately, before the mortar has stiffened.

Brixment mortar has great plasticity, high water-retaining capacity and bonding quality, great resistance to freezing and thawing, and freedom from efflorescence. Because of this *combination* of advantages, Brixment is the leading masonry cement on the market.

BRIXMENT

LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY



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makes possible an important new drafting technique. It's not just a colored pencil; it's a *color-drafting* pencil. Twenty-four colors—and every one reproduces perfectly. Lets you draft with as many colors as you need. Saves time, prevents mistakes.

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Other new Mars products include: the Mars-Pocket-Technico for field use, the Mars "Draftsman's" Pencil Sharpener with the adjustable point-length feature, and the efficient, clean Mars lead sharpener. All available – along with the established standards: Mars-Lumograph black graphite drafting pencils, Mars-Technico lead holder and leads, and Tradition-Aquarell painting pencils – at all leading engineering and drafting supply dealers.

J.S. STAEDTLER, INC. HACKENSACK, NEW JERSEY

April 3, 1958, p. 26), you may be interested in some further details.

The H columns are in Thomas-steel, with physical properties equal to ASTM A 7. The H shape was fabricated by welding rolled heavy flange plates to a rolled web. Flange thickness reaches 3 in. for the bottom columns. Welds were made by the submerged arc process.

A number of girders, notably heavy ones spanning the second floor, were also fabricated by welding. All field joints were bolted, using high tensile bolts throughout.

The steel was fabricated by La Brugeoise et Nivelles in Nivelles, Belgium, according to the specifications of the Building Code of New York, and inspected before shipment by the Belgian branch office of Robert W. Hunt Co., Engineers, Chicago.

The erection of the structural steel proceeded smoothly and without any problems, which is a credit to the Belgian fabrication.

MARCEL L. LOMONT
Leon G. Rucquoi & Associates, Inc.
New York, N. Y.

Stirrup Design

SIR—I would like to learn more of the design procedure practiced by engineers for providing stirrups in reinforced concrete beams when the allowable shear stress is exceeded.

It is customary to provide enough stirrups to carry only the shear stress exceeding the allowable stress given by the code. My contention is that if the allowable shear stress is exceeded, all the shear force is carried by the stirrups in tension and should be designed accordingly.

In my opinion, the reinforced concrete beam will behave nearly the same when cracks appear due to shear as when cracks appear due to bending.

Further opinions on this subject will be welcomed.

P. P. VALERIO
Instructor
Civil Engineering Department
Brooklyn Polytechnic Institute
New York, N. Y.

CALENDAR

Southern Municipal and Industrial Waste Conference, 7th annual meeting Duke University, Durham, N. C. May 1-2.

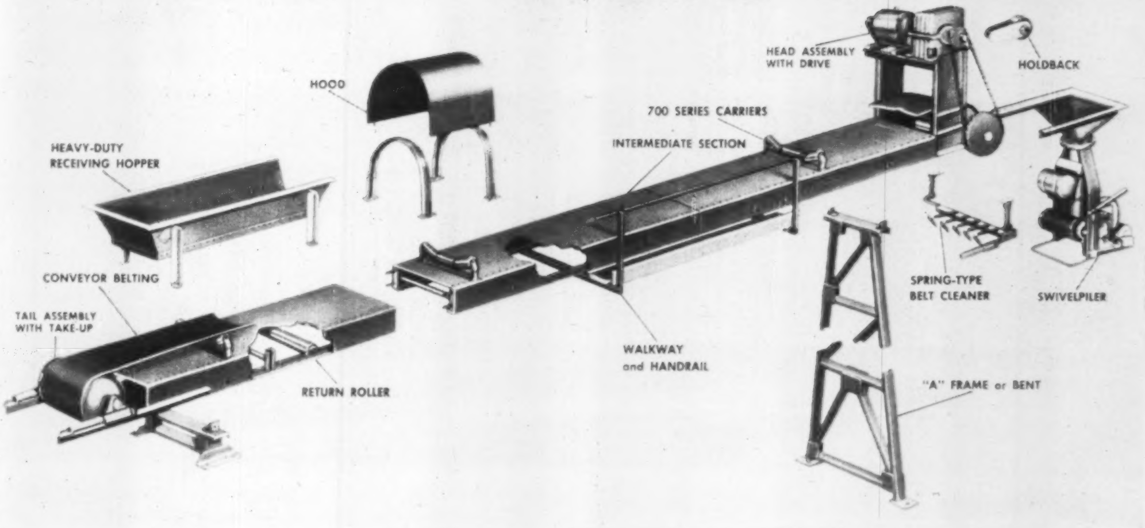
Consulting Engineers Council, Second Annual Board of Directors Meeting, Sir Francis Drake Hotel, San Francisco, May 1-3.

Purdue Industrial Waste Conference, 13th annual meeting, Purdue Memorial Union Building, Lafayette, Ind., May 5-7.

National Society of Professional Engineers, annual meeting, Chase-Park Plaza Hotels, St. Louis, Mo., June 11-14.

NOW STEPHENS-ADAMSON COMBINES ITS QUALITY CONVEYOR COMPONENTS INTO A

Pre-Engineered SECTIONAL BELT CONVEYOR



ALL NEW . . . NO OTHER COMPETITIVELY PRICED PACKAGED CONVEYOR LIKE IT! EXCLUSIVE ENGINEERING FEATURES ASSURE POSITIVE SATISFACTION

Here in one competitively priced, complete packaged unit is the efficient, economical and dependable answer to your conveying needs. The combination of STEPHENS-ADAMSON exclusive bent-plate decking, new pulleys with revolutionary crown, and quality conveyor components assure easy erection, maximum flexibility and minimum maintenance cost. Four high-strength bolts fasten head assembly . . . four bolts join intermediate sections . . . six bolts connect tail assembly offering simplified conveyor erection and alteration. More for your purchasing dollar today . . . more for your conveying dollar tomorrow!

Bent-Plate Decking—Punched every eight inches in rows on top, bottom and along its sides; the sturdy, 12 foot sections of steel decking provide many advantages over conventional truss-type construction. In addition to simplified erection and ease of alteration of conveyor, the decking provides protection for return belt run. Return rollers are mounted on underside, shielded from falling material.

- **STEPHENS - ADAMSON Pulleys** — Revolutionary new crown providing more belt training effect with less belt stress . . . featuring new all-steel S-A "Squeezelock" Hub.
- **STEPHENS-ADAMSON 700 Series Carriers** — Precision ball bearing carrier rollers (4" or 5") assure smooth, trouble-free performance. Roller bearing carriers optional.
- **SEALMASTER Self-Aligning Ball Bearing Units** — Performance proven in countless conveyor installations.
- **SACO Speed Reducer** — Rugged, compact, quiet unit... famous for dependability.
- **STEPHENS-ADAMSON Spring-Type Belt Cleaner**—Wipes belt clean of wet or dry materials. Simple to install, adjustable, saves belt, eliminates clean-up maintenance.
- **STEPHENS-ADAMSON Holdback** — Easily mounted on headshaft to prevent belt reversal. Protects equipment and personnel.
- **STEPHENS-ADAMSON Swivelpiler** — Extends reach of conveyors tenfold through centrifugal thrower principle.
- AVAILABLE IN 18", 20", 24", 30" and 36" width conveyors . . . Delivered from stock!

STANDARD PRODUCTS DIVISION
STEPHENS-ADAMSON
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WRITE FOR BULLETIN 458

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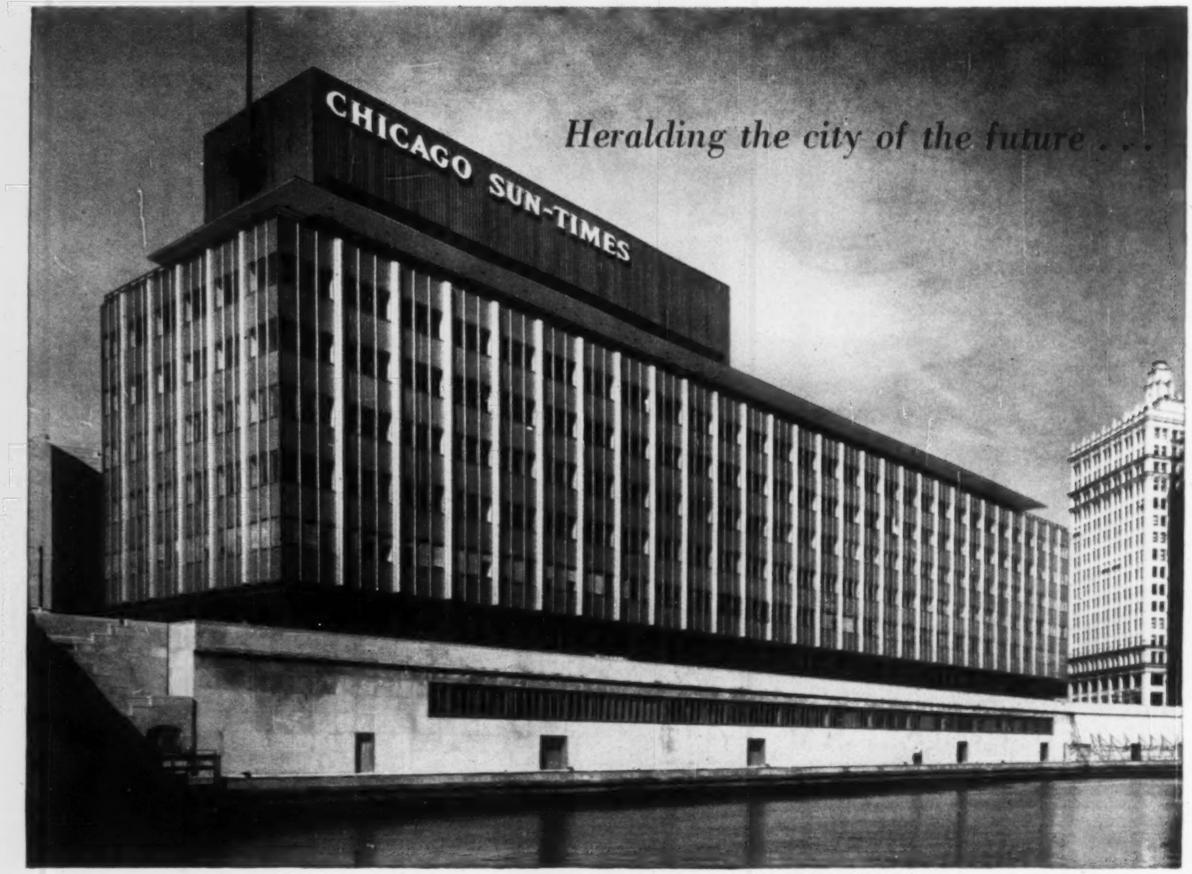

Heralding the city of the future . . .

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Architects-Engineers: Naess and Murphy
General Contractor: George A. Fuller Company
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NEW CHICAGO SUN-TIMES BUILDING

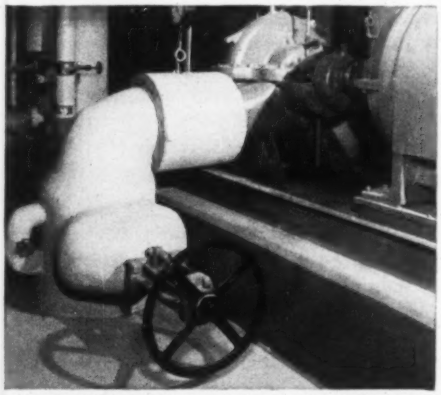
equipped with long-lasting, dependable JENKINS VALVES

In advanced planning, as in location and design, the new Sun-Times Building is front-page news. For this is the first project to be completed in a development which will transform the area north of Chicago's Loop into a city of the future.

There can be only one basis for selecting physical equipment for such a plant: the ability to perform efficiently and economically *for years*. This is why Jenkins Valves are standard on all plumbing, heating and air conditioning lines in the block-long structure.

The extra measure of performance and reliability built into Jenkins Valves has for generations assured long operating life and low maintenance cost. That's well to remember when you specify valves . . . especially since the valves that bear the famous Jenkins Diamond mark *cost no more.* Jenkins Bros., 100 Park Avenue, New York 17.

Sold Through Leading Distributors Everywhere



10" Fig. 651-A Jenkins Iron Body Gate Valve, fitted with by-pass, on suction line of pump which supplies Chicago River Water as condenser water and process water for type foundry requirements.

JENKINS VALVES

LOOK FOR THE JENKINS DIAMOND

JENKINS
SINCE 1864
Jenkins Bros

ENGINEERING NEWS-RECORD

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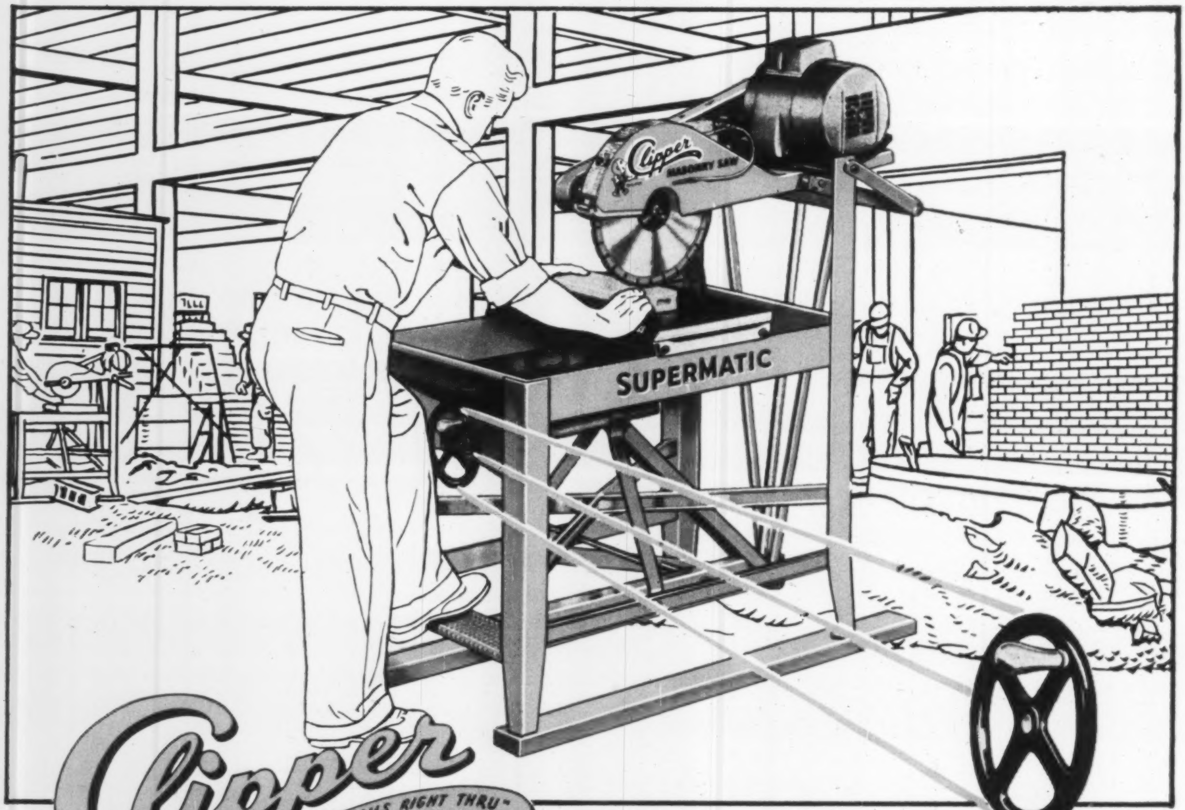
THE CONSTRUCTION WEEK

CLOSED HIGHWAY CONCLAVE—State and federal highway engineers are meeting in Chicago this week to examine thoroughly the new Federal-Aid Highway Act of 1958, and to plan on how best to handle the additional highway construction made possible by it. The two-day closed session, sponsored by the American Association of State Highway Officials, is being attended by the chief engineers of the state highway departments and their planning engineers, as well as district engineers of the Bureau of Public Roads. Their most immediate problem is how quickly they can translate into construction an additional $400 million available immediately for the ABC (primary, secondary and urban) systems (ENR Apr. 24, p. 22).

BUILDING TRADE RAISES LEAD—Construction wage gains lead all others thus far in 1958. A survey of 37 settlements inside the construction industry in the first quarter of this year, just completed by the Bureau of National Affairs, shows 70% provide hourly boosts of 15 cents or more, and another 19% are in the 13-to-15 cent bracket (see p. 82). For all industry, in 712 first quarter contracts covered, only 14% of contracts had wage increases of 15 cents per hour or more and only 9% were in the 13-to-15 cent category.

DOWN TO THE SEA IN HOUSES?—New action to arrest the creeping downhill progress toward the sea of a high-priced residential tract on Los Angeles County's Palos Verdes peninsula will be proposed in the next few days now that the "nailing" job done last year is an acknowledged failure. Palos Verdes Properties, a land developer in the 165 acre slide area, will submit an estimate of about $375,000 to county officials for proposed earthfill and rock revetment aimed at stopping the slide. But how the county will react is anybody's guess. Despite the installation of 25 caissons last year along a half-mile front in an attempt to pin down the sliding layer (ENR Sept. 19, 1957, p. 26), it is still moving seaward at about ¾ in. a day. And earthfill and revetment are no guarantee that it will stop moving, says County Engineer John A. Lambie.

A PLUG FOR APPRENTICESHIP—Selection of the nation's champion bricklayer apprentice in Cincinnati, Ohio, this week is focusing attention again on labor and management efforts to train new and competent craftsmen for the construction industry. Forty-two state champions are competing on the 10th Annual Apprentice Bricklayer Competition, sponsored by the bricklayers union, the Mason Contractors Association and Structural Clay Products Institute. Since World War II, 50,000 journeymen bricklayers have come from the ranks of apprentices and the average age of union members has been cut from 58 to 41.



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No Head Angle Adjustments To Make—

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YES . . . HI-LO does everything! Without turning off motor, you position cutting head, ready to cut any material from wall tile to concrete block—at any height—from 0" to 17".

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Clipper SUPERMATIC is years ahead with the Sta-Level HEAVY DUTY CUTTING HEAD powered by a specially designed 2 H.P. G.E. motor, and over 30 outstanding features found on no other masonry saw . . . it is ENGINEERING LEADERSHIP by men who know the masonry cutting industry best!

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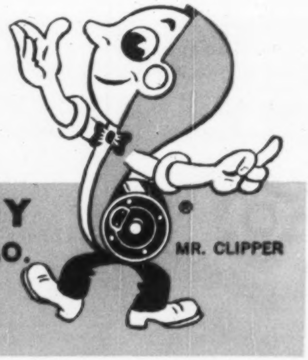
Your Clipper Factory Trained Representative will welcome the chance to prove to you . . . on Free Trial . . . SUPERMATIC is the Finest Saw . . . with the Best Head in the Business!

For Outstanding Economy, Use Clipper Premium Quality Blades— DIAMOND, BREAK-RESISTANT, ABRASIVE

Call Your Nearby Clipper Warehouse Collect for Immediate Shipment



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WASHINGTON OBSERVER

- **Upper Colorado speed-up**
- **St. Lawrence tolls due soon**
- **Depletion allowance tightening**
- **Columbia River bills to hearing**
- **Air pollution conference called**

● **The Upper Colorado Project is gaining from the anti-recession speed-up.** The Bureau of Reclamation expects to award bids on the $83 million Flaming Gorge and the $37 million Navajo units this summer.

Bid invitations have gone out already for Flaming Gorge, to be opened June 10.

The Navajo bids are expected to be opened in time to make an award by June 30.

Both projects had been expected to go to bid this fiscal year, but the speed-up is a direct result of the Administration's plea to government agencies to get out the work on projects ready for construction.

—

● **The St. Lawrence Seaway tolls schedule will be out soon.** The U. S and Canadian tolls committees are completing negotiations now for tolls on the Seaway. The new levies won't be changed until the 27 ft channel is ready for operation. (A 14 ft channel around the rapids will be opened in July; the 27 ft project will begin operations a year from now.) The Seaway Corporation says shippers will pay the same rates in the beginning that they will some years from now; the tolls are based on projected traffic.

Tolls on bulk commodities—including sand, gravel and cement—may run as low as 50 cents per ton. The rate on semi-finished and finished products will go to perhaps $1.25 a ton. The tolls will be charged on the cargo carried, not the capacity of the ship.

—

● **Makers of brick and cement would have to pay another $50 million in federal income taxes this year** under an Administration proposal restricting their use of depletion allowances. The Treasury wants to change court decisions which have allowed the producers to figure their depletion allowance on the price of their finished products—instead of on the value of the clay or cement rock as it comes from the ground.

The result would reduce the figure on which the depletion allowance is based. Wilbur Mills, chairman of the House Ways and Means Committee, says he will hold hearings on the proposal later this spring.

—

● **Legislation to establish a Columbia River Development Corporation** will come up for hearing before a Senate public works subcommittee on May 21. The legislation, by Sen. Richard Neuberger (Ore.), would change the Bonneville Power Administration into a corporation.

The idea is aimed at integrating all electric power development in the Northwest. The hearings are only the first round, and little progress is expected this year.

—

● **An air pollution conference is being planned for the fall.** The Public Health Service has named a planning committee to stage a national conference on Nov. 18-20. The meeting is intended to give a full-scale picture of the causes and effects of air pollution.

CONVEYOR BELTS

Higher speeds, greater loads, longer life —with fewer belt plies!

The unusual thing about this self-propelled loader is the fact that it is equipped with a *4-ply* belt which is turning out a more satisfactory performance than the *5-ply* belt it replaced. This 4-ply belt is a U. S. Rubber Giant® (style EN), 54' long, and is doing such a good job that the operator is very well satisfied with its excellent performance.

The service is rugged—handling sand and gravel at speeds up to 700 fpm over small pulleys, under severe weather conditions, sun and ozone.

These belts—like all "U.S." belting—are engineered to always assure you of cost-saving performance and durability. Belts to service your requirement are available, right from stock, at your local "U. S." Distributor or write us at Rockefeller Center, New York 20, N.Y. In Canada, Dominion Rubber Co., Ltd.

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MAY 1, 1958

ENGINEERING NEWS-RECORD

Urban Renewal

The First Hope ➡ **Completely new cities from the ground up through area-wide razing of slums and blighted areas, followed by construction on the cleared land.**

Modernized and improved cities through area-wide rehabilitation, conservation and razing of only non-salvagable structures. ⬅ **The Latest Hope**

Rehabilitation: Key to Faster Action

New York City last week unveiled a $150 million urban renewal plan that ultimately may radically modify the relatively common idea that the only way to modernize the nation's cities is through the wholesale destruction of slum areas. At the same time, the program—should it catch on throughout the nation—will open up vast new markets for small general contracting firms and specialty contractors, while also leaving wide areas of operation for giants in the contracting business, engineers and architects.

The project outlined by the city's planning commission takes in a 20 block area in mid-Manhattan along Central Park from 87th to 97th St., inclusive, and extends west from the park boundary for two blocks. Under the proposal the worst of the structures would be razed, but this activity represents only a small percentage of the entire area. Twelve solid blocks of building would be rehabilitated. Within the remaining eight blocks, structures would be razed, rehabilitated or left untouched. In total, actually less than three blocks of buildings would be removed.

• **The working tools**—To carry out the program, all of the legal aids available on city, state and federal government levels would be employed. These include Federal Housing Administration mortgage insurance, low interest city loans, partial tax exemption on middle-income housing facilities, condemnation powers, and public housing.

To obtain the widest possible interest, condemned properties will be turned over to many small developers for reconstruction and rehabilitation, rather than to one or a few large developers.

To help sell the idea to builders, James Felt, chairman of the Planning Commission, said the city may apply to the Housing and Home Finance Agency for a $1 million advance to be used for the purchase and rehabilitation of several structures. The advance then would be repaid from the proceeds received from the sale of the improved properties.

• **Federal government thinking** — In coming up with this result of a two year study paid for by the federal government under Section 314 of the Housing Law of 1954, New York has started to push a bandwagon parked and practically ignored for years in the garages of city planners across the nation. The program undoubtedly will receive the enthusiastic support of the Eisenhower Administration and all of the federal agencies involved, because the Housing and Home Finance Agency recently has attempted to turn attention to Section 314 with only mild results. This tool authorizes federal "demonstration grants" to develop realistic proposals for a specific renewal area that might be a pattern for bringing new life to deteriorated and deteriorating neighborhoods.

Although the urban renewal laws were set up to allow cities to raze and rebuild their blighted areas, it also was expected that renovation and conservation would play an important—even a major—part in slum-elimination programs. But the idea of new cities, rebuilt from the ground up, apparently most excited a majority of the nation's city planners and as a result emphasis has been placed on the complete clearing and rebuilding of huge areas within the cities.

Because of the vastness of the jobs projected, progress necessarily has been slow. Thousands of families and businesses cannot be removed from an area over-night. They must have some place to go and this fact alone, in many cases, has been a formidable problem. In many cities, additional public housing units first had to be constructed to accommodate the families scheduled for removal from slum housing.

With speed and economy a requisite of family relocation, the U. S. Public Housing Administration under the direction of Charles E. Slusser entered the picture in recent months. The agency approved experimental public housing programs in two cities—Philadelphia and Cedartown, Ga.

In Philadelphia, the local housing authority has embarked on a program of buying older private dwellings, which are then renovated and leased as public housing units. Total maximum cost for each unit, including purchase and rehabilitation is $10,000 (ENR Apr. 3, p. 113).

In Cedartown, the authority was authorized to build single to four-family low-rent houses on individual lots. In this case, the new units were built by National Homes Corp., prefabricated home manufacturer of Lafa-

. . . Rehabilitation: Aid for Ailing Cities

yette, Ind., under a negotiated contract. Each unit cost less than $10,000.

About 20 dwellings are completed on seven sites. Five sites contained slum units which were razed. Plans now call for construction of an additional 30 units and bids will be taken on a competitive basis to give conventional builders and prefabricating companies equal opportunity for the job (ENR Feb. 13, p. 96).

• **Presidential hint**—These activities indirectly reflect the thinking of President Eisenhower, for the Administration early this year said it would like to see less than the two-thirds participation by the federal government in urban renewal.

The HHFA has not overlooked the hint. It moved to encourage strongly just the sort of program that New York City has announced. It set up a new office in its Urban Renewal Division, and from "missionary" offices in eight or 10 cities is watching and guiding pilot renovation projects. The staff of the new office also is actively campaigning and educating other civic groups in several cities on the advantages and benefits of rehabilitation and conservation.

• **A lagging program**—There are other indications that the urban renewal program has not progressed as rapidly as had been hoped and expected. Among such signals are Sections 220 and 221 of the National Housing Act, which are tied directly to urban renewal.

Both provide for the rehabilitation of existing housing and new construction which then can be rented or sold.

Under Section 221, greatest emphasis so far has been placed on individual housing units sold to individuals forced to leave their homes because of urban renewal land clearance or other governmental action requiring relocation of a family. This also provides for those who are forced to leave because of new highway construction or other community improvements.

Great interest has been shown in the program by cities, but construction activity has fallen far short of the interest shown.

As of March 1, 139 localities were certified for a total of 68,857 living units. Out of that number, 7,700 applications for Federal Housing Administration mortgage insurance had been received. But of the entire units certified under the program, only 2,400 housing units had been started or completed, either in the form of new construction or rehabilitation of existing units.

The agencies involved consider the program so far as being successful, saying that it must be remembered that the first certifications under Section 221 went out only 29 months ago. But it also should be recalled that in that same period, private housing starts under other FHA and VA financing programs not tied to urban renewal, as well as conventionally financed housing, totaled 2.4 million.

Some of this apparent inactivity stems from cost, investor disinterest and even community-erected barriers.

Under Section 221, the FHA will insure 100% of the mortgage to a maximum of $9,000 and in areas designated as "high cost" a maximum of $10,000 is allowed. Approximately 30% of the units certified are located in high-cost areas. Such mortgages have a maximum pay-off period of 40 years.

• **Failing in Atlanta**—Atlanta, Ga., offers a good example of why and how this program is falling short of expectations, for numerically it is the largest such undertaking in the country. And significantly, the program is considered the backbone of that city's overall urban renewal program as well as its expressway system planning.

Last August the city was certified by the HHFA for 5,500 units of housing under the section, which was planned as a two-year, $50 million operation. Initial plans called for the construction or rehabilitation of 1,500 houses during the first half of this year. So far, however, only 77 units have been allocated for construction and only 200 building permits have been issued.

The big hitch is land cost, for the city government has stipulated that one-family "221" housing be constructed on lots containing at least 7,500 sq ft having a minimum lot frontage of 60 ft. Duplex units must be on 9,000 sq ft lots having a 70 ft frontage.

In addition, local housing officials specified that Section 221 housing must contain a minimum of 810 sq ft of living area, plus 40 ft of storage area, plus a carport. In place of the carport, a builder has the option of adding 50 sq ft to the basic living area. However, city zoning laws as applied to the same zones that "221" housing would be constructed in allow dwellings containing a minimum square footage of only 650 sq ft.

• **Specified out of the market**—These and other specifications put the housing right outside the required price of $9,000 according to FHA officials in the area. They estimate the houses are a $10,000 to $11,500 product.

It is reported that city officials wished to make certain that existing neighborhoods would not be "downgraded" by the relocation housing.

Malcolm Jones, director of the city's Urban Renewal Department, said that failure of the 221 program will be a severe blow to Atlanta's $250 million urban redevelopment, highway and civic improvements programs.

• **Another slow starter**—The sales and rental program under Section 220 does not appear to be doing much better than the 221 grouping. This section of the National Housing Act applies to reconstruction of blighted areas, in contrast to Section 221 which provides the means of relocating families displaced by urban renewal projects.

As of January 1 of this year, 34,998 units had been programmed. Of that total only 7,302 units had been started or completed with the bulk of that activity occurring in New York City.

According to Joseph Nardone, director of FHA's New York City insuring office, out of $40 million in Section 220 housing under construction in the nation during 1957, New York City had more than $32 million out of that national total.

• **Idle dollars**—The millions of dollars in funds earmarked by the federal government for slum clearance, but which are lying idle, are another strong indicator that the urban redevelopment program is bogging down.

Richard L. Steiner, Federal Commissioner of Urban Renewal, recently said that communities have failed to start redevelopments after making planning studies. He said that in New York State and the six New England states alone, $340 million is tied up in federal grants for 131 projects. But only 41 jobs, involving $148 million in federal grants, were in construction or operation.

• **More private initiative needed**—Some of the lagging also can be attributed to a lack of drive on the part of private enterprise (see page 78). Walter S. Fried, Regional Administrator of the Housing and Home Finance Agency, New York City, called for more middle-income housing built privately with such public aids as low-interest loans and partial tax exemption.

And along the same line, he urged that cities be more active in selling their programs to prospective sponsors and to start their campaigns for sponsors at the earliest stages of discussion and planning of the future developments. But he also warned that the cities' efforts should not be aimed at offering developers an unduly large write-down on the land price. (The write-down is the price of the land to the developer, and lower than that which a city paid to acquire the property.)

BRI Plans Stepped Up Research Program

Annual meeting hears proposal for development and promulgation of new data through research

The Building Research Institute busied itself with a wide variety of subjects at its seventh annual meeting, held in Washington, D. C., last week. During the three-day session, the membership learned that BRI had reached a turning point, analyzed world-wide trends in building research, heard a forecast of the building market, reviewed fire protection, studied costs and examined the federal building program.

Charles H. Topping, BRI president, reported that from now on the organization would bend its efforts mainly to promotion of building research and dissemination of the results. Up to now, BRI had concentrated on determining what is now known about the behavior of building materials and installed equipment and studies of existing construction methods.

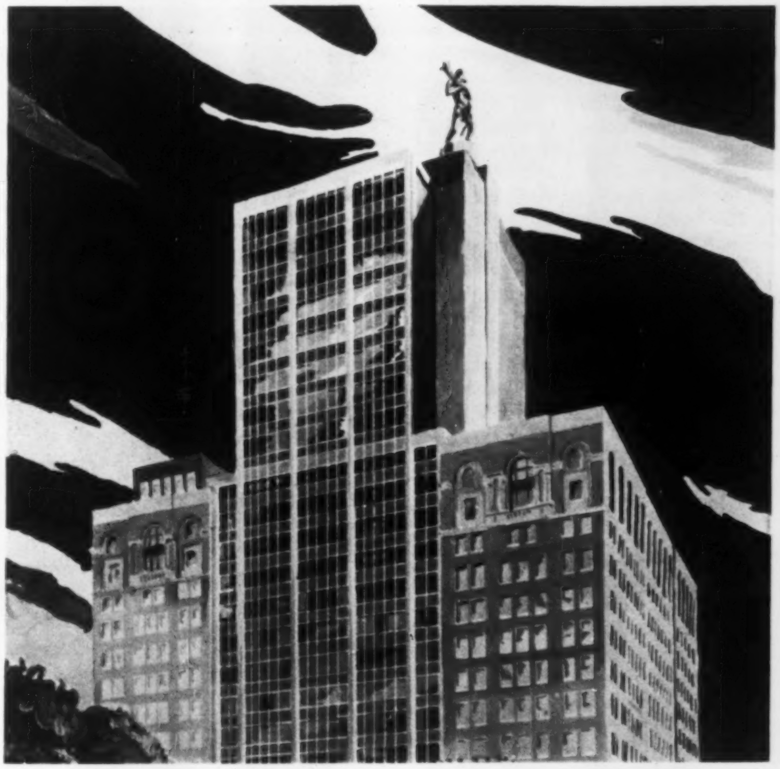
• World-wide trends—A picture of building research around the world was given by Robert F. Legget, Director, Division of Building Research, National Research Council of Canada.

Treating activities outside the U. S., he called attention to the pioneering work in this field of the British Building Research Station at Watford, near London, which was established in 1921. He also noted the work of two other outstanding research organizations—RILEM, Le Reunion Internationale des Laboratories d'Essais et de Recherches sur les Materiaux et les Constructions, with headquarters in Paris, founded in 1947; and CIB, the International Council for Building Research, Studies and Documentation, with headquarters in Rotterdam, founded in 1954 under the auspices of the United Nations. In addition, Mr. Legget briefly described research in about a dozen countries.

• Unsteady business—Turning from this summary of current work, the BRI took a look at the future with the aid of statistics submitted by Robinson Newcomb, economic consultant, Washington, D. C. He foresaw 1958, as an economist's nightmare: "The fact that the total spent for construction in 1958 may be about the same, and actually up by possibly a half billion or more above 1957, does not by any means imply a steady year for construction. Some areas, such as industrial building, will be down sharply; other areas, such as highways, may rise sharply. Others, such as housing, will see changes in the mix."

The mix Mr. Newcomb refers to is the combination of different types of housing units making up the annual total. He points out a trend to mobile units and apartment houses. The two types together accounted for less than 11.5% of total housing units in 1954, but for 20.5% in 1957. So, he says, a higher percentage of families are moving toward smaller, less expensive units. And though more units may be built in 1958 than in 1957, the total expenditure for them may be less.

• Fire safety vs ovens—In a session on fire protection of buildings, Horatio Bond, chief engineer of the National Fire Protection Association, reviewed current fire-protection studies and meth-



New Tower to Rise From Existing Building

A 22 story office tower will soon be a wall-to-wall addition in the courtyard of a U-shaped 13 story building in Wilmington, Del. Workmen are already tearing down a 5 story section now occupying the space.

Shapdale, Inc., owner of the existing structure, the Delaware Trust Building, is spending $6½ million to add the metal- and glass-walled tower. That figure excludes partitions, which will be installed by Hercules Powder Co., the main lessee.

The proximity of old and new in the building creates unusual problems. Tower foundations for example, must be built below an existing underground cafeteria and garage that are to be spared, and new columns must be erected through those spaces. The irregular layout necessary under these circumstances to dodge existing construction will extend just high enough to clear the old work. At that level the new columns will be topped with a grid of 7-ft-deep plate girders to carry the steel frame on up, with spacing rearranged as desired.

Some existing windows in the courtyard walls will be sealed. Others will be incorporated in openings between the new tower and the rest of the building.

W. Ellis Preston, of Wilmington, is the architect. Severud, Elstad & Kruger are the consulting engineers, and Moran, Proctor, Mueser & Rutledge are the soils consultants—both New York firms. Wark & Co., of Philadelphia, are the contractors.

ods of evluating fire-safety classification of materials. John C. Thornton, architect, Royal Oak, Mich., showed how buildings could be designed to assure fire safety. He bemoaned the use of enclosed courts, stairs that don't lead directly to the outdoors, stairwell doors that are kept open, exit doors that open inward, unenclosed moving stairs protected only by sprinklers, wire glass in skylights that is difficult to break to let out hot gases, and fixed windows that cannot be used for escape.

"It is strange," Mr. Thornton said, "that when we design something new, we forget all that we have learned the hard way in former years. This is best illustrated by what is being done with air conditioning. It took us years and many deaths to eliminate the open stairway in certain new buildings, but today we are installing ventilating and air-conditioning systems which can spread fire and gases throughout a building faster than the open stairs ever did. . . . The buildings often are tight, with fixed windows, and in case of fire, the air ducts will suck in the gases and heat from the fire and send it to every room in the building, often adding the fumes from burning insulation."

There are devices that will shut down the fans immediately when smoke is present, Mr. Thornton noted, but comparatively few installations have them. He also called attention to the advantages of sprinkler and fire-detection systems.

• **Costs studied**—Construction, maintenance and operation costs were scrutinized closely by several speakers. James H. Duncan, president, the Work-Factor Co., Chicago, for example, analyzed the annual cost of industrial buildings.

George R. Bailey, of Chicago, discussed factors affecting construction costs of office buildings, and John E. Haines, vice president, Minneapolis-Honeywell Regulator Co., covered economic factors in air conditioning.

• **Government plans**—The building programs of the federal government were surveyed in another session. Harry B. Zackrison, supervisory general engineer, Office of the Chief of Engineers, reviewed military construction plans for the future. He pointed out that changing requirements for various types of weapons systems and systems for weapon detection will result in far greater percentages of available construction funds being used for construction of these and supporting items.

Fred S. Poorman, Deputy Commissioner, Public Buildings Service, outlined current and future building plans of his agency. And Norman Mason, Commissioner, Federal Housing Administration, summarized FHA's technical studies program.

The Clearance Issue

Decision is nearing on clearance of the Atlantic inland waterway bridges

Whether fixed span bridges along the Atlantic Intracoastal Waterway should be 80 ft above mean low water or 55 ft was dealt with at a recent hearing held in Jacksonville, Fla. The 80 ft is desired by waterway interests and the 55 ft by highway interests. And within the near future, the results of the hearing plus other information being collected will be the basis for a top level decision by the Corps of Engineers in Washington, D. C.

Should the 80 ft height—a longstanding minimum standard of the Corps—be kept, it could mean an additional cost of $500,000 for two-lane bridges and $1 million for four lanes, over the 55 ft minimum. So says W. S. Winslow, hydrographic engineer for the North Carolina Highway Commission, who adds that because of increasing highway traffic, fixed bridges have become almost a necessity.

Other highway officials also are against the 80 ft fixed bridge, as is the U. S. Bureau of Public Roads. BPR is also against movable bridges, which are not being permitted on the interstate highway system.

An early permanent decision is being pushed for since over the next 10 years 27 to 29 bridges will have to be built over the waterway from Trenton, N. J. to Key West, Fla.

Most of the organizations favoring the 80 ft height are yachting associations. But dredging contractors, some of them represented at the Jacksonville hearing by the Southeastern Dredge Owners Association, also are against the lower height, because it would mean modifying their rigs or using outside routes along parts of the waterway.

The hearing was held by a fact-finding board appointed by Maj. Gen. F. M. Albrecht, South Atlantic Division Engineer; chairman of the board is Col. Paul D. Troxler, Jacksonville District Engineer.

Hoover Dam Gets ASCE Plaque

Commissioner of Reclamation Wilbur A. Dexheimer (right) accepts with a handshake from ASCE president Louis R. Howson a plaque honoring Hoover Dam as one of the seven civil engineering wonders of the U.S. Hoover Dam, completed in 1936, was included in the list selected by ASCE in 1955 because both design and construction revolutionized dam building. The presentation was made in mid-April ceremonies on top of the structure. Similar plaques are being presented to the other six wonders: Grand Coulee Dam, Colorado River Aqueduct, San Francisco-Oakland Bay Bridge, Chicago's Southeast Sewage Plant, Empire State Building and Panama Canal.

Water Industry Starts Construction Drive

AWWA opens up campaign at Dallas convention to raise spending on waterworks to $750 million a year

The 78th annual convention of the American Water Works Association in Dallas, Tex., last week kicked off a drive to raise the waterworks industry's new facilities spending to a $750 million a year level. This is the annual amount, according to AWWA-developed figures, needed just to bring plant up to the standards of pre-World War II years. Put another way, the waterworks industry has not yet been able to make up for the hiatus of construction during 1941-45.

Current spending is indicated by the Labor and Commerce Departments' put-in-place record for waterworks. In the calendar years 1955, 1956 and 1957, construction ran $470 million, $574 million and $560 million, respectively. The AWWA drive seeks to increase 1958 spending from a budgeted $600 million-plus figure.

The push for new construction is to be centered around a public relations campaign aimed at convincing the U. S. at large that water is worth paying for. To accomplish the program, AWWA feels that water rates in many cases will have to be increased by from 25% to 50%. No federal or state aid is being sought; needed projects are to be pushed through on a local "do it now, do it yourself" basis.

The big drive got started in Dallas last week when letters were dispatched to President Eisenhower and governors of the 48 states. Then all through the week, AWWA luminaries and local waterworks men shuttled back and forth between Dallas' municipal auditorium and radio and TV studios for interviews and speeches.

Wherewithal for the national drive was provided by the AWWA Board of Directors which approved the expenditure of $60,000 a year. Much of it will go for hiring a public relations staff. The first chunk of money will come from the association's reserve, but thereafter it will be provided from a dues increase approved by the board last week. Active member dues will go from $10 to $15 a year.

• **Manufacturer certification**—All sides to the two year hassle over manufacturer certification of products sold to the waterworks industry seemed reasonably satisfied with a compromise certification procedure ordered into effect last week by the AWWA board. Producers must make affidavit to AWWA that their products meet applicable AWWA standards. Licensees may then affix a registered AWWA certification mark on their products.

The compromise pertains to the method of insuring that licensees conform to AWWA standards. As presented to the convention by AWWA stalwart Louis R. Howson, president of the American Society of Civil Engineers, the approved procedure requires voluntary compliance by manufacturers. Although he thought voluntary methods would suffice, Mr. Howson was vigorous in warning that stronger measures—involving the once-proposed AWWA testing of products—would be invoked if necessary.

For various practical reasons, the AWWA board ordered certification to apply to only fire hydrants (Std. C-502), gate valves (C-500) and meters (C-700 through 705) for the present. The procedure is to become fully effective on Jan. 1, 1960 to allow makers to clear their shops of products which have been cast with "AWWA" initials upon them.

• **Operation fails, patient lives**—Summing up a panel discussion that reviewed recent legislation on water rights, Prof. Abel Wolman of Johns Hopkins University viewed with satisfaction what he saw as a marked cessation of the scramble to change water laws in many states. This he attributed to a couple of good rainfall years coming right after numerous dry years which triggered numerous efforts to amend existing water rights legislation.

Happily, these efforts failed while the patient—water resources development—still thrives, said Professor Wolman. However, he sees the need for a good many changes in both eastern riparian and western appropriative water laws, but would have the amenders go a lot slower.

The Baltimore sage commended several recent documents as bases for good changes. One is the as yet unpublished fourth draft of Michigan Law School's model water law (revised from the third draft which water engineers blasted as naive—see Sept. 12, 1957, p. 25). Another is the current Engle bill before Congress to allow federal reimbursement to local public water supply projects for attendant flood control, navigation, fish and wildlife and irrigation benefits (see page 96).

• **Managing water**—Management subjects received much attention in Dallas last week. During a discussion of joint administration of water and sewerage facilities, several questioners complained their water departments were being shortchanged on reimbursements for administrative duties performed for the sewerage divisions, implying the latter were poor stepchildren. This approach was condemned by Philadelphia Water Commissioner Samuel S. Baxter, who cited his city's administration of water and sewerage divisions as complete equals in one integrated department (albeit somewhat misnamed as the Philadelphia Water Department). Representatives of Dallas, Austin and several other cities backed up the Philadelphia experience in rapid-fire order from the floor.

Management on a regional water supply level, as it pertains to Ontario's pioneer water resources development law was described by A. E. Berry, general manager of the Ontario Water Resources Commission (ENR Apr. 19, 1956, p. 30). OWRC primarily constructs feeder water supply facilities for communities or groups of communities in the province. The commission finances, constructs and operates the ficilities, but municipalities can obtain title after repaying OWRC. Since the commission came into being in April 1957, it has signed agreements with 25 municipalities covering 21 projects to cost over $13 million.

One of the waterworks industry's biggest management failures was the subject of Robert S. Millar, manager of the Denver Board of Water Commissioners. He lamented the complete lack of tests that most other industries use with great success to measure the suitability of prospective employees. These tests are developed after testing large enough samples of highly regarded employees to determine the factors they excel in.

Safety in waterworks also got a big play as AWWA's first awards for low accident frequencies were presented. Such awards are to be the most important means of bringing the water industry's notoriously high accident rate in line with those of other utilities

• **Much research reported**—A goodly amount of anticipated and completed research was reported to the convention. Bernard B. Berger of the U.S. Public Health Service's Taft Sanitary Engineering Center said TSEC recently began studies in its new pilot water plant on whether water plants get their money's worth from rapid sand filtration. He noted that sand filters are the most expensive portion of a treatment plant and that the two big jobs of filtration are done better by other processes:

Chemical coagulation removes turbidity better than filters and chlorination does more for disinfection than filters.

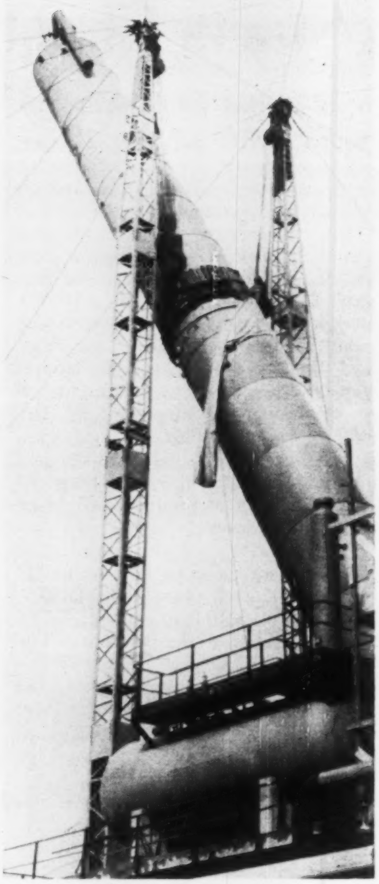
Two engineers at the Bureau of Reclamation's Denver laboratory, G. E. Burnett and C. E. Selander, were optimistic that plastic linings and coatings for steel water pipe could compete with today's cement and coal tar linings. They cited encouraging performance and cost data for experiments with plastic coated penstocks at Shasta Dam in California. It was suggested that plastics such as phenolic, vinyl, polyethylene, epoxies, neoprene and other synthetic rubbers would be feasible on water distribution pipe in thicknesses between 10 to 20 mils. These materials cost about ten times as much as coal tar, but coatings of the latter material are usually applied in thicknesses of 100 mils.

A warning on the validity of claims for a slew of commercially available monomolecular films to control reservoir evaporation was sounded by Uel Stephens of Fort Worth, reporting on some Texas-sponsored research conducted in cooperation with the Southwest Research Institute. Although many of the hexadecanol compounds now available can reduce reservoir evaporation better than 30%, none of them have been fully cleared on public health aspects by USPHS or state and local health authorities.

• **Approve Missouri River dams**—A panel of waterworks men from cities along the Missouri River hailed the effect of the great Missouri River dams on raw water quality. Operators from Omaha, Kansas City and St. Louis agreed that their water was less turbid and softer, with Kansas City reporting a saving of $84,000 per year in softening expense. Only one possible adverse effect was noted. An increase in taste and odor problems at St. Louis may be due to the elimination of absorbing clays which now settle behind the dams.

One of the outstanding papers of the convention analyzed in detail the emergency reuse of sewage plant effluent as water supply at Chanute, Kans., for five full months beginning October 1956. No less than nine authors from the Kansas State Board of Health in Topeka and the USPHS combined to produce a 70 page report replete with charts, tables and photos. A number of copies have been reproduced for distribution.

New president of AWWA is Lewis S. Finch, chief engineer of the Indianapolis (Ind.) Water Co., succeeding Fred Merryfield of Corvallis, Ore. Lauren W. Grayson, general manager of the Glendale, Calif., Public Works Department, is new vice president. Attendance at Dallas was 3,024 including wives, slightly short of a record.



Lift for a Tall Tank

A 212 ft long 13 ft 8 in.-dia fractionating tower weighing 215 tons was erected in one piece at Cities Service Refining Corp.'s Lake Charles, La., oil refinery.

Tellepsen Petro-Chem Constructors raised the huge pressure vessel with two steam-driven hoists and two 155 ft guy derricks of 200 and 250 tons capacity, respectively. The actual lifting took four hours.

Close quarters amidst working refinery equipment made it necessary to erect the tank with great care. In accordance with earlier calculations to determine the best lifting point, the slings were attached 114 ft from the base, and two winch-equipped tractors kept the vessel in line as it rose.

The tower was set on a 375 cu yd reinforced concrete foundation and fastened down with 40 anchor bolts. The foundation is designed to withstand 125 mph winds.

The size of the high-strength steel tank was a problem even before it got to the site. Wyatt Metal & Boiler Works fabricated it as a single unit in their Houton shops and had to get six specially constructed flat cars to ship it.

Contested Project

Sewerage design contract could total $135 million

San Diego has awarded its biggest engineering contract ever for the study and design of a new metropolitan area sewage system. The engineers—chosen from among 16 nationally known firms that had made proposals—are a joint venture of Holmes & Narver, Los Angeles, and James A. Montgomery, Pasadena.

Action climaxed eight years of discord over the type and site of a treatment plant and outfall to replace the present facility that discharges sewage into San Diego Bay. The city is under order by the Regional Water Pollution Control Board to cease polluting San Diego Bay, part of which has been quarantined by the State Health Board.

The joint firm's fee will be based on construction cost, now estimated at $26.8 million. The design is to be done within six months and is to include basic plans for the system including recommendation of a location of the treatment plant and an ocean outfall. Construction of the project is expected to take four years.

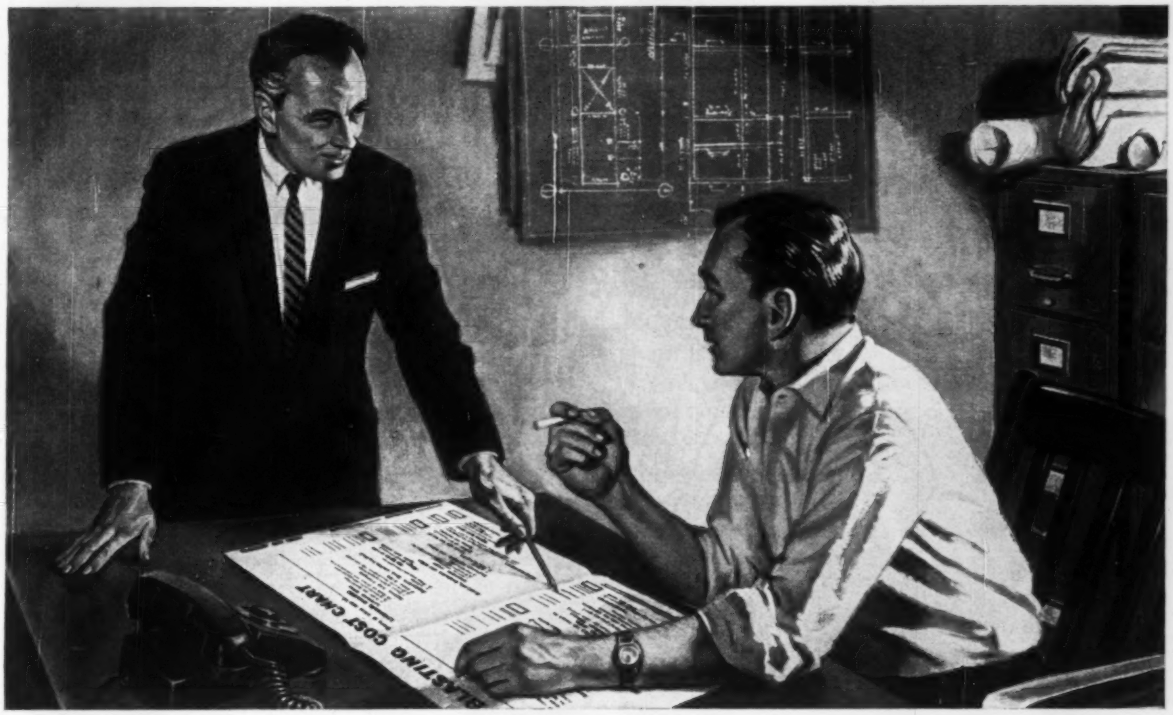
Controversy over the project has fallen into two categories:

1. Where to put it—A general obligation bond issue to place the treatment plant and ocean outfall on Point Loma failed to get the necessary two-thirds majority of voters in 1952. Since then the City Council has informally adopted a site in the south bay area, 11 miles south of downtown San Diego, a site recommended in 1955 by three engineers, John A. Carollo, Adolf H. Koebig, Jr., and Richard R. Kennedy (ENR July 14, 1955, p. 25). The Point Loma site had been recommended in a report made in 1952 by AM Rawn, Charles G. Hyde and David Caldwell (ENR Oct. 9, 1952, p. 68). That report pointed out that this site would be the most economical for a sewage treatment plant, because it was the only site on the coast where sewage could be discharged into deep water without a long outfall, but local property holders opposed it.

2. Who would design it—A group called the San Diego Engineering Associates recommended that local engineers be named in the joint venture rather than as subcontractors.

The new project will be financed by revenues from a sewer service charge based on a percentage of water use. Voters in 1954 approved a charter amendment permitting these revenues to be used for a new sewer system. Voters still must approve a revenue bond issue to allocate the funds specifically to the project.

WHAT ARE YOUR ∧TRUE BLASTING COSTS?



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BLASTING COST CHART

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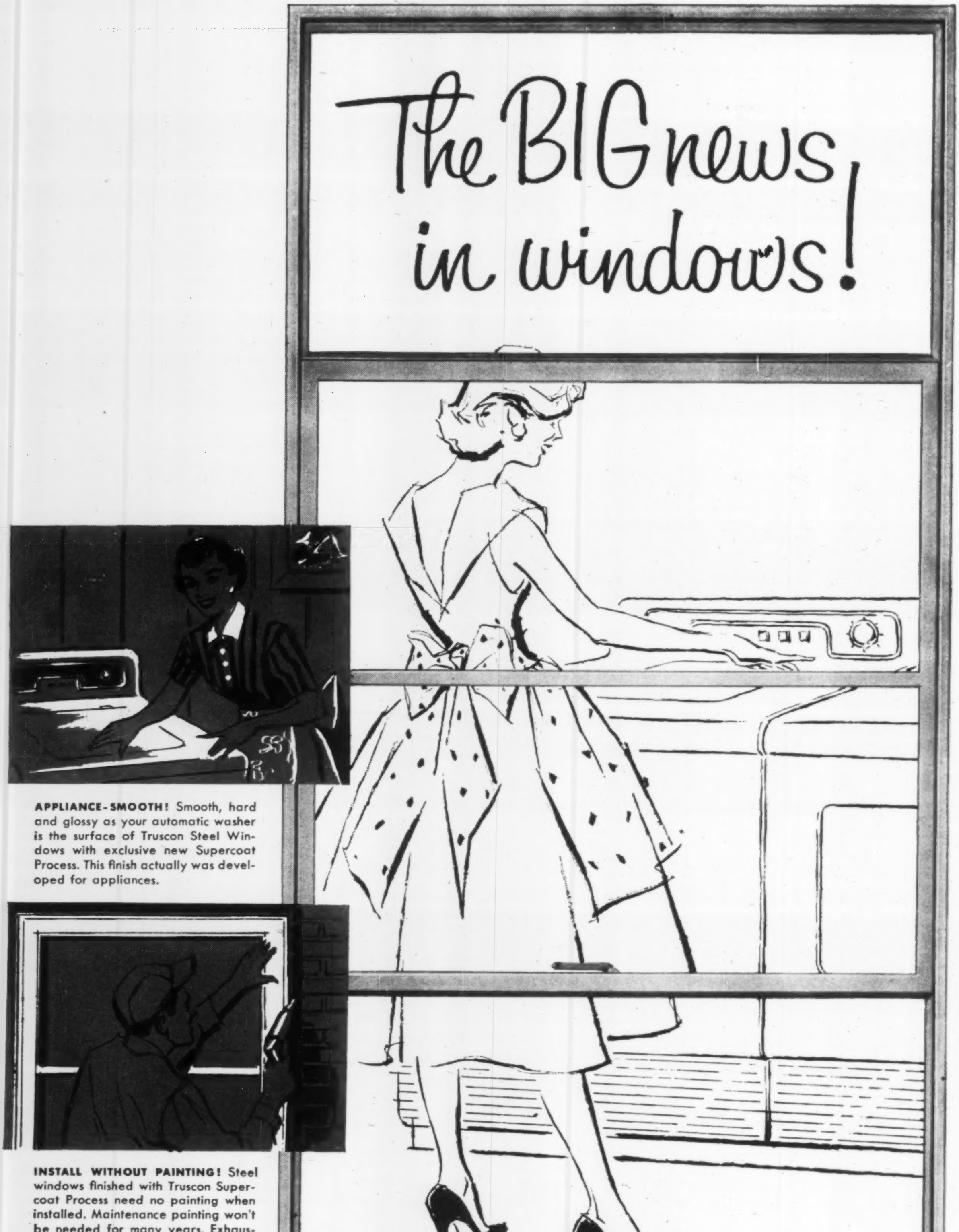

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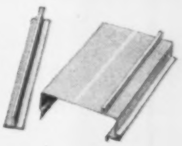

More Truscon products for modern buildings include Vision-Vent® Window Walls, Stainless Steel Windows and Curtain Walls, "O-T"® and Clerespan® Steel Joists, Ferrobord® Steel Roofdeck, Concrete Reinforcing Bars and Welded Wire Fabric. Republic's Berger Division offers Republic Steel Kitchens, Steel Lockers and Wardrobes, and a complete line of Roof Drainage Products in galvanized steel, stainless steel and terne. Republic's Steel and Tubes Division manufactures ELECTRUNITE® E.M.T. and Republic Heavy Wall electrical conduit, as well as square and rectangular ELECTRUNITE Welded Steel Tubing for architectural applications. Through its manufacturing divisions, Republic is big in building. Through its basic steel facilities, too, Republic is big in building. Republic mill products include Steel and Plastic Pipe, Sheets and Roofing, Bolts and Nuts for construction, Stainless Steel, Roofing Ternes, Nails.

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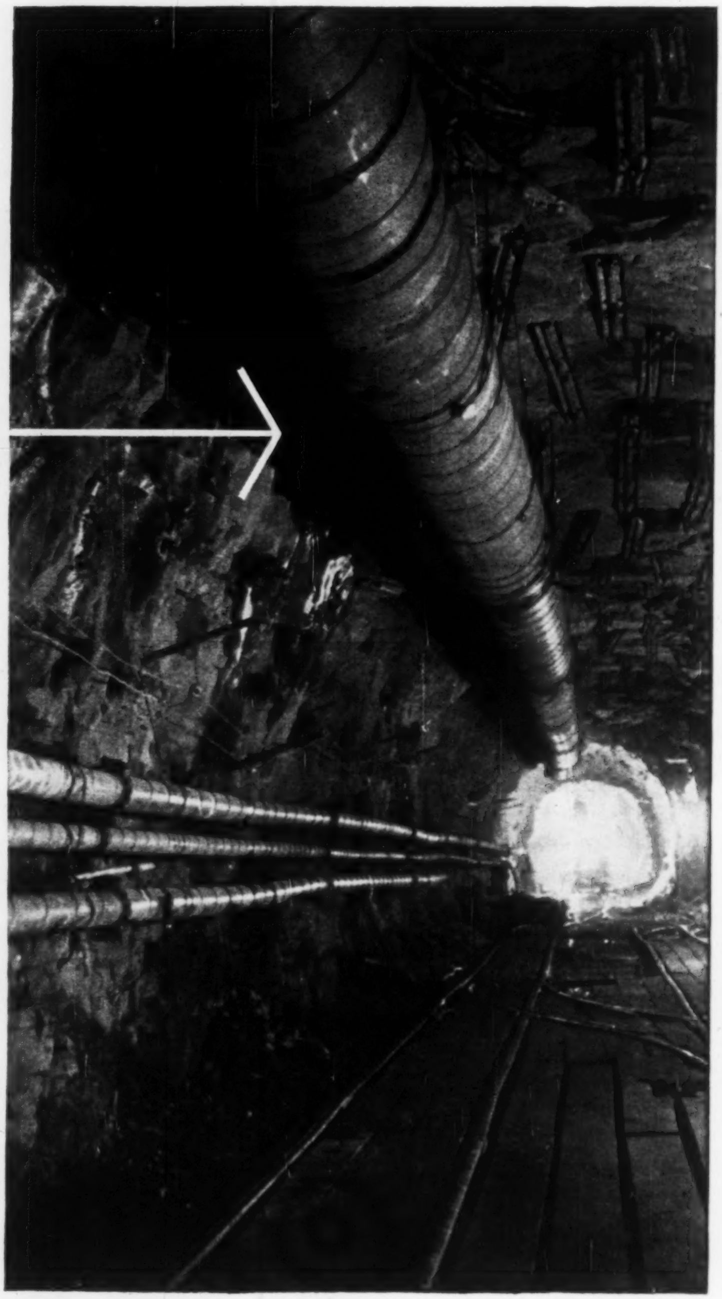

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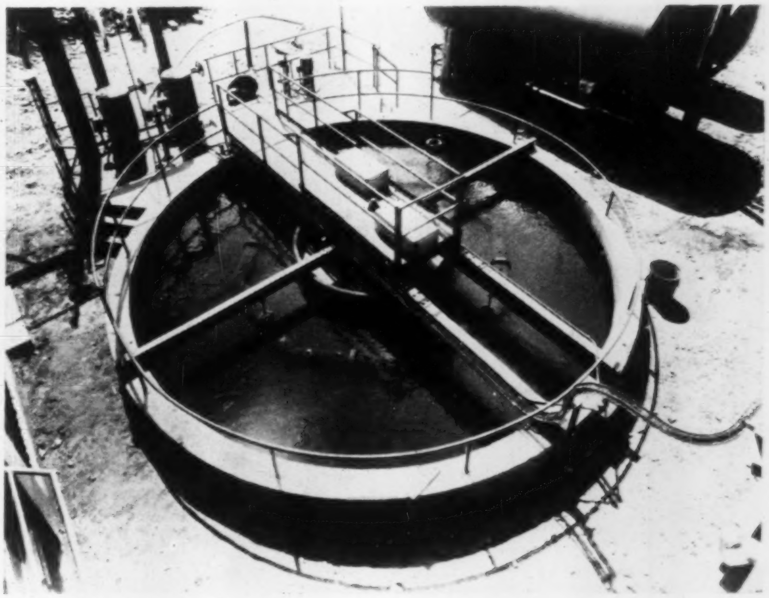
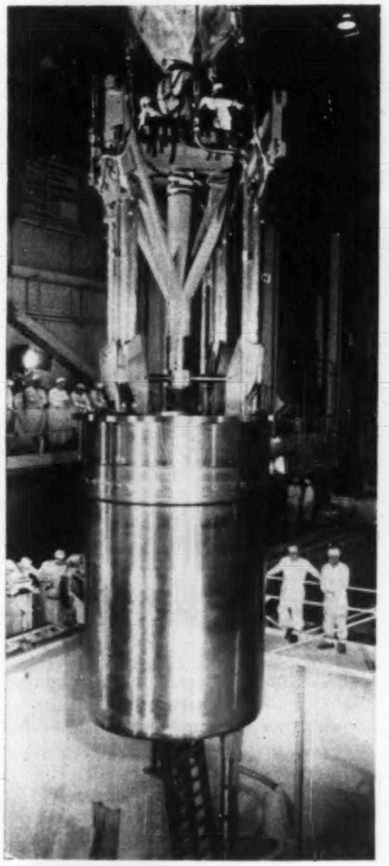


COAGULATING TANK at Shippingport is one of many steps in purifying river water before use in reactor. Finished water is six times as pure as triple-distilled water.



NUCLEAR REACTOR is water cooled. Subject to great nuclear bombardment, the water must be free of mineral content to reduce radiation hazards.

Nuclear Reactor Needs Purest of Water

The recently finished Shippingport, Pa., nuclear power plant needs process water as pure and clean as water is ever likely to be. To get it, a not so pristine Ohio River supply receives the most extensive treatment ever devised for conditioning water.

Process water at Shippingport is used in two places. The pressurized water reactor uses it as the heat transfer agent in the so-called primary piping system. Water circulates around the reactor core under pressure and at an average high temperature of 540 F. After absorbing the heat produced by the splitting of the uranium atoms, the water is pumped to the heat exchanger, where it gives up its heat to water in the secondary piping system. Here, steam is generated to drive the turbine-generators for the production of electric power.

Water completely free of metallic ions and other foreign matter is needed for two reasons: To reduce radiation hazards and to minimize scale deposits that would reduce efficiency of the heat exchange system.

Pure water does become radioactive after being exposed to nuclear fission. But this radioactivity does not last long and is not a major radiation hazard.

On the other hand, metallic ions or other foreign matter in the water become highly radioactive and, more importantly, remain hot for long periods of time. So the best way to stop radiation problems is to make the water as mineral free as possible before it circulates through the reactor.

Scale formation would be detrimental to either of the two piping systems. In the primary cycle, even a thin layer of scale would reduce the efficiency of heat transfer. This is also true in the boiler system, but here, in addition, there is danger of scale depositing on the turbine blades.

• All water is treated—All process water used at Shippingport is treated to remove organic or mineral impurities. The water as it is pumped from the river is first treated with chlorine to kill any microorganisms. Coagulating chemicals then are added to precipitate suspended solids. Closed steel filters packed with graded anthracite remove what solids remain after the water leaves the settling tank.

Two softening tanks, each containing 38 cu ft of cation exchange resins, remove calcium and magnesium ions present in the form of dissolved salts by substituting sodium ions in their place.

From the softeners, the water goes to deionization units containing both cationic and anionic resins. All ions—anion and cation—are removed. Softening is not required as a preliminary to this mixed-bed deionization but is employed because it increases operating efficiency when large volumes of water high in mineral content must be conditioned.

When the water leaves these beds it is so completely free of mineral content it sometimes shows an electrical resistance as high as 18 million ohms per cm. As a measure of its purity, this resistance value is six times that of water triple-distilled in quartz.

(Continued on page 32)

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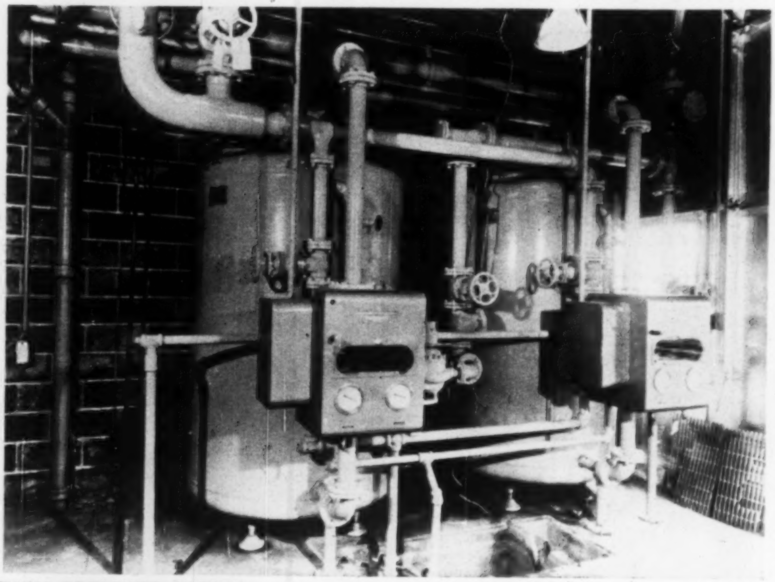
. . . Pure water for reactor reduces radiation hazard



TWIN PRESSURE FILTERS remove any solids remaining after the water passes from the settling tanks. From here the water goes to softeners for start of ion removal.

• The water is hungry—Such pure water is tremendously aggressive when in contact with metals that are readily corroded. Though stainless steel alloys are used throughout the circulating systems in the plant, minimal corrosion occurs and adds metallic ions to the water. In the water circulating in the primary piping such corrosion would mean a slow buildup of persistent radioactivity.

To prevent this buildup, a separate mixed bed ion exchange unit is situated on the return between the heat exchanger and the reactor. Part of the water on each cycle passes through this bed. In the course of the many cycles the water makes each day through the primary system (each minute 50,000 gal of water are piped through the reactor with friction alone sufficient to raise the temperature of the water by 50 F each hour) the water is repeatedly subject to the polishing action of the ion exchange unit.

In addition to polishing the water, the chemical composition of the resins in the bed raises the pH of the water well above neutral as an added protection against corrosion.

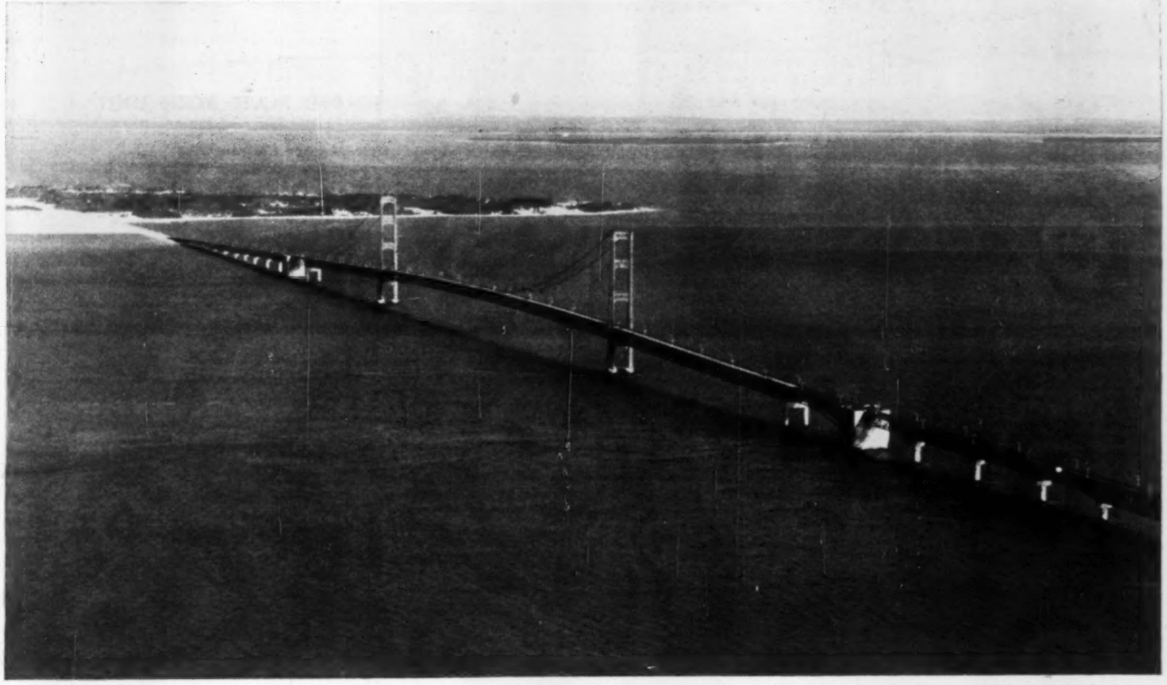
• Disposal by storage—Despite placing of the bed on the line before the reactor, some metallic ions that do bypass the bed on each cycle pick up radioactivity in passing through the reactor. These ions as they are eventually caught by the resins gradually will contaminate the bed. Because of this, the bed will not be regenerated. When the bed has accumulated its fill of radioactive ions, the resins will be disposed of by storage in specially built concrete tanks buried in a nearby hillside.

Another exchange unit insures trouble-free operation of the steam system in the power plant. After exerting its energy on the turbine generator, the steam goes to a vacuum condenser. The effluent from the condenser is split, part of it going to an ion exchange unit providing continuous removal of any ions in the water resulting from corrosion.

A large volume of water—75,000 gal in a concrete canal surrounds the pressure vessel containing the reactor—absorbs radiation from the reactor. This shield of water in time will become "hot" and then must be replaced. Before it can be discharged harmlessly it must be deionized by passing through an exchange bed similar to the one on the primary cycle. The contaminated resins from this bed also will be discarded to buried storage.

The water conditioning system was designed and installed by Hungerford & Terry, Inc., Clayton, N. J. Rohm & Haas Co., Philadelphia, supply the resins, and information in this article comes from the Rohm & Haas Reporter.

The Shippingport plant is the world's first full-scale nuclear power station, built primarily for electric energy generation. It was built as a joint venture of the Atomic Energy Commission and Duquesne Light Co. (ENR, Feb. 14, 1957, p. 44). The plant is designed for an initial operating load of 60,000 kw, but will be able to produce 100,000 kw. All power produced will be used in the Pittsburgh area.



Air view of the famous Mackinac Bridge, spanning the Straits of Mackinac in Michigan. About three miles of Armco FLEX-BEAM Guardrail has been installed on this project.

Mackinac Bridge Motorists Protected by 15,750 Feet of FLEX-BEAM Guardrail

Approaches on the Mackinac Bridge, the world's largest suspension bridge, are protected by three miles of Armco FLEX-BEAM® Guardrail.

This deep-beam guardrail, used at danger spots on the nation's highways for the past 25 years, is bolted to sturdy posts. Because of the overlapping FLEX-BEAM Guardrail sections, the installation acts as an integral unit. Should a vehicle strike the rail there is less chance of dangerous "pocketing"—the guardrail helps guide the vehicle back onto the road.

On the north side of the bridge, 6200 feet of Armco Guardrail was installed by Louis Garavaglia Contractors. On the south side, 9550 feet of Armco Guardrail was erected by J. H. Wyatt, who subcontracted the job from Hertel & Deyo Co., General Contractors.

* * * *

Although primarily designed for highway installations, FLEX-BEAM Guardrail is finding many other applications for municipalities and industries. It is one of the more than 30 proved Armco Products for engineering construction. Send coupon for more data. Armco Drainage & Metal Products, Inc., 5048 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.

ARMCO®

On the north side of the bridge, two men bolt sections of Armco Guardrail on steel posts. Superstructure of bridge is in background.

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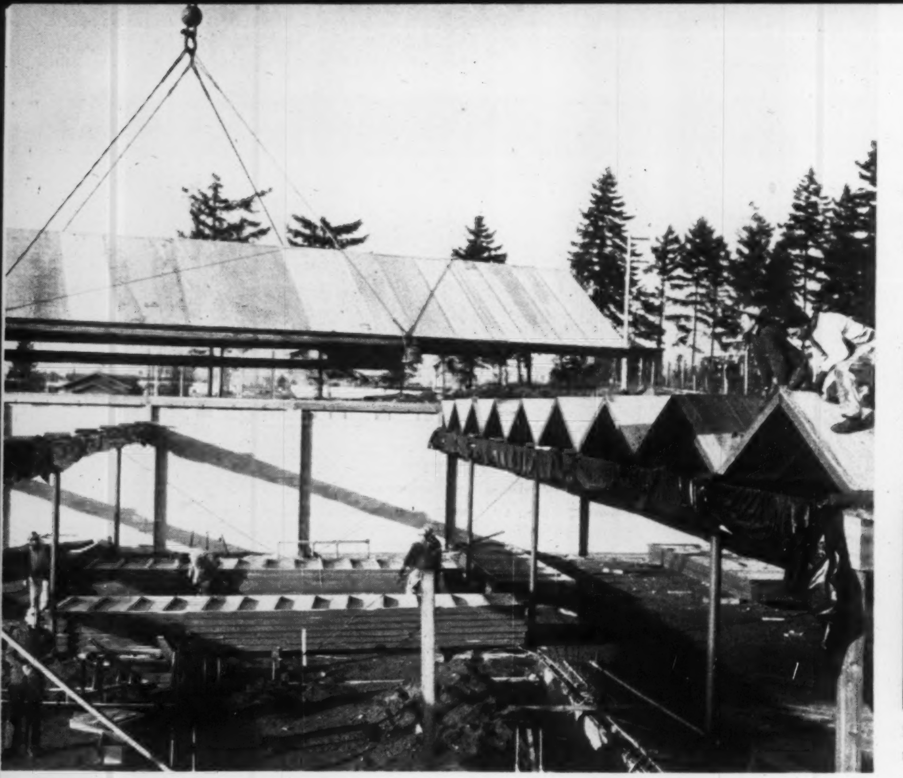

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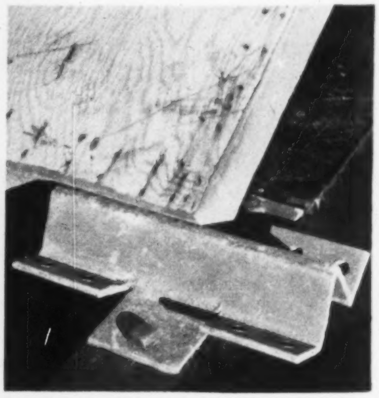
FOLDED PLATE ROOF UNIT of 26 ft span is lifted into position on Seattle shopping center building.



SUPPORT BRACKET for folded plate roof units was fabricated from two steel angles.

New Buildings Use Plywood in Curved and Folded Plate Designs

Two recent building projects in the state of Washington, where many new uses of plywood as a construction material have originated, illustrate how this material can be used to roof large areas by fabricating it to folded plate or curved vault designs.

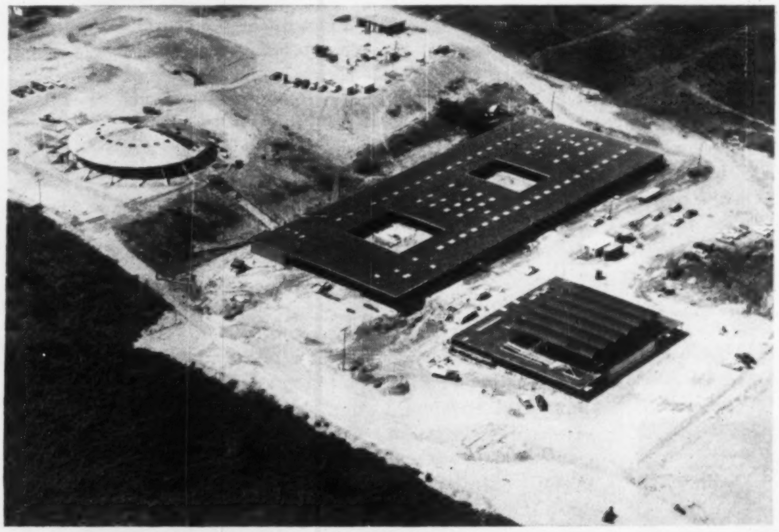
One project is a store in a suburban shopping center in Seattle where V-shape folded panels cover 14,040 sq ft. The other is the H. F. Hunt Junior High School in Tacoma, a group of three buildings, one of which is a 7,000 sq ft gymnasium roofed with 16 ft-span arch vaults. Of the other two buildings, the 31-classroom main building is roofed with flat panels, while the cafeteria is a domed structure in which the plywood panels are supported by inclined glued laminated timber beams radiating from a central support to outside buttresses.

• **Folded plate roof**—The Seattle shopping center, according to the engineering research laboratory of the Douglas Fir Plywood Association, represents the biggest application to date of the folded-plate principle in wood. Designer was Harvey H. Johnson, Seattle structural engineer.

The store is 110 x 116 ft, with concrete masonry walls on three sides and a front primarily of glass. Its roof structure consists of 23 inclined planes, 5 ft 7½ in. wide, sloping in opposite directions to form a series of peaks and valleys 120 ft long from the front to the back of the building.

Structurally, these plates of plywood work in pairs as a series of 11 folded plates spanning 10 ft each across the front and 26 ft from beam to beam through the structure from front to back. There are four of these "blue-lam" beams running the width of the building, supported at the side walls by block piers and at intermediate points by 4 in. pipe columns.

The plates were fabricated on the job in jigs, using ⅝ in. fir plywood cut by the mill to a uniform length of 5½ ft. The standard 4 ft width of the plywood was utilized generally, with some necessary variations. Longitudinal framing consisted of a 4 x 4 at the top of the frame and a 3 x 4 at the bottom, or valley, edge. The ridge chord was ripped at an angle so it would butt squarely against the neighboring chord when the two



PLYWOOD ROOFS in flat, domed and arched designs cover building for Tacoma school.

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The death of a principal stockholder in a close corporation can lead to financial chaos in the business. It can mean extreme hardship to the family of the deceased and to the remaining stockholders.

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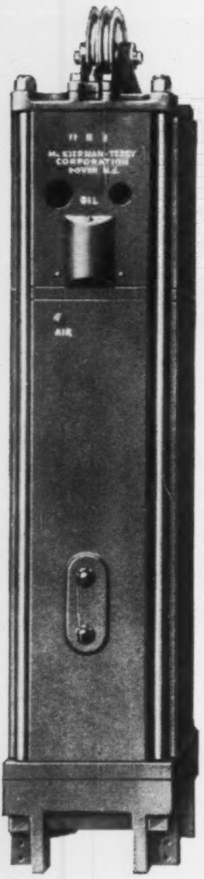

McK T

McKIERNAN-TERRY CORP.
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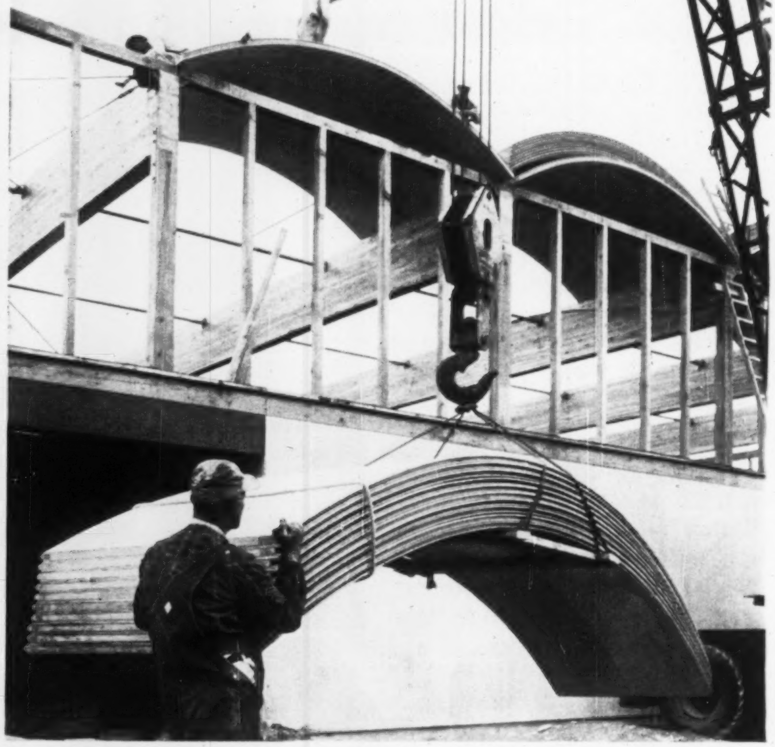
. . . Plywood curves and folds to new designs



VAULT ROOF of gymnasium was rapidly built with curved sandwich panel units.

plates were in position. The rippings were saved and placed in the valleys for a walk, or cant strip. Vertical members were 3 x 4's on 4 ft centers, to which edges of the plywood were nailed, while a 2 x 4 in the center of each plywood sheet served as a stiffener. Casein glue was applied to the framing members by roller prior to placing the plywood in position.

Nailing was done with an air gun using 6d nails. Where cross members butted against the chords, a triple grip galvanized iron anchor clip was nailed by hand. The top purlin and the 3 x 4 at each end were drilled to accept ⅝ in. lag bolts for joining the panels.

The panels were lifted into position by a crane, and plates were joined in the valleys by a support bracket consisting of two ⅜ in. angle irons, 1½ ft long, welded together. The corners of four panels occupied such a bracket, with screws holding them. The bracket was bolted to the supporting beam. After the roof was completed, it was covered with a three-ply mineral surface roofing.

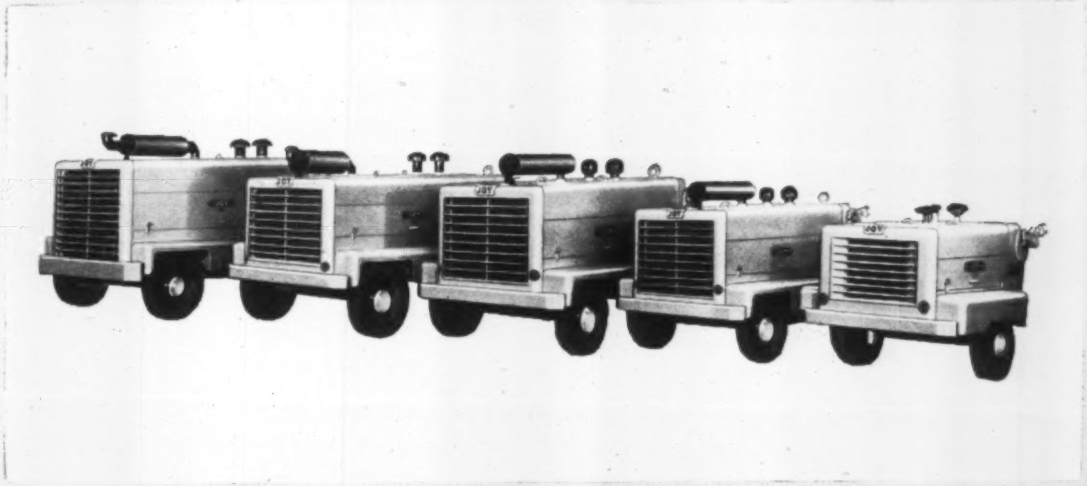
The Powell Construction Co., the contractor, lifted the entire roof into position in nine hours. In-place cost of the roof surfaces, including materials, labor and erection time, was 80 cents per sq ft, according to the architect, Jack N. Bryant of Seattle. Materials for the folded plates amounted to 35.4¢ per sq ft of the roofed-over area.

• **Curved vaults**—The 96 x 72 ft gymnasium of the new junior high school in Tacoma, is roofed with stressed skin sandwich panel vaults. There are six of these vaults of 16 ft span, and the sandwich consists of a top layer of $\frac{5}{16}$ in. fir plywood, a bottom layer of ¼ in. fir plywood, and a ¾ in. honeycomb paper core. The sandwich was fabricated by Panelbild Systems, Lynnwood, Wash., with waterproof glue in a special press.

Factory-made in 4 ft lengths, the vaults are equipped with male and female end joints for field assembly. At the edges, they are nailed and glued into a beveled ridge of the 9 x 10 in. gluelam beams of the gymnasium framing. Completed cost for the vaulted roof was about $1.10 a sq ft.

Because of the special design of the vaults, Tacoma school officials required a structural test before adopting them. The Douglas Fir Plywood Association therefore tested a prototype panel by covering it with 7,500 lb of bricks—120 psf or four times the design load. The resulting deflection was 0.38 in.

The architect for the Tacoma school was Robert Billsbrough Price, and general contractor was the Standard Construction Co., both of Tacoma.



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Secondly, you purchase complete compressor *reliability* when you buy Joy Airvane Rotaries . . . Don't take our word for it, ask your Distributor to put you in touch with other contractors who have them on the job . . . you'll be surprised how Joy Airvane owners brag at the way Joy saves them money on air.

Want the name of your nearest Joy Distributor? Write ***Joy Manufacturing Company, Oliver Building, Pittsburgh 22, Pa.*** In Canada: *Joy Manufacturing Company (Canada) Limited, Galt, Ontario.*

Reliability is a must on any job. The "work horse" ability of the Model RP-900, shown here with a JOY TWM-5, is typical of all the Airvane Rotary Portables.

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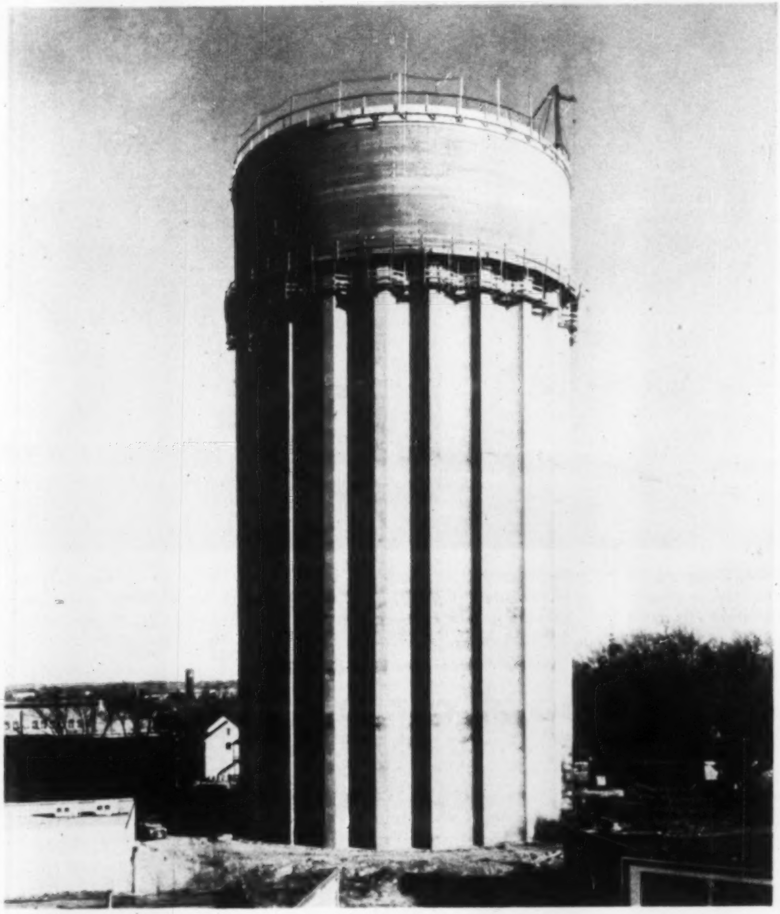
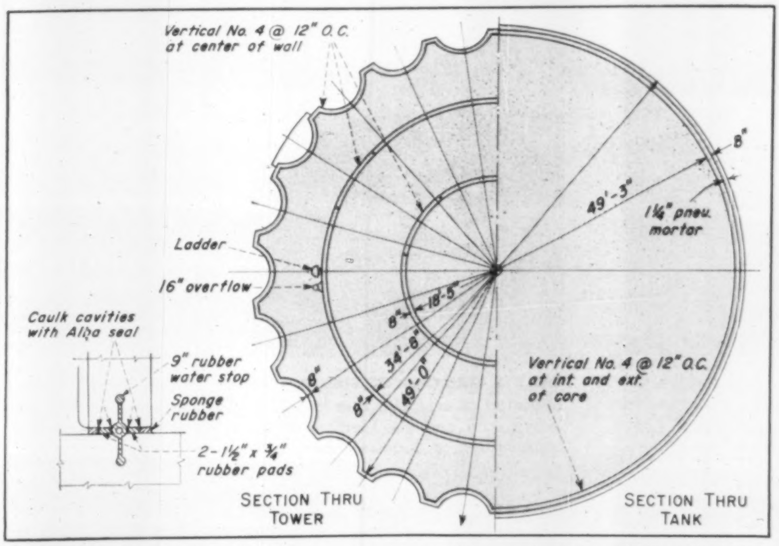
Big Prestressed Tank Rises in Texas



ELEVATED WATER TANK over 200 ft high will hold 2 million gal of water. Structure is 100 ft in dia. Tank portion above flutes is about to be prestressed.


Vertical No. 4 @ 12" O.C. at center of wall
Ladder
16" overflow
Caulk cavities with Alpa seal
9" rubber water stop
Sponge rubber
2-1½" x ¾" rubber pads
8"
49'-3"
1¼" pneu. mortar
18'-5"
8"
34'-8"
49'-0"
8"
8"
Vertical No. 4 @ 12" O.C. at int. and ext. of core
SECTION THRU TOWER
SECTION THRU TANK

TOWER that is 160 ft high comprises three 8 in. thick annular rings. Using slip forms, concrete crews placed 3,000 cu yd for the tower, continuously over a 12 day period.

A two million gallon prestressed concrete water tank on a 160 ft concrete tower is nearing completion in Tyler, Tex. The all-concrete structure was bid at $327,000, beating out a steel alternate.

The tower consists of three 8-in.-thick annular rings (the outside one fluted), and rests on a 4 ft 3 in. thick reinforced concrete mat. Slab and walls are of 3,000 psi concrete.

Slip forms 42 in. high were utilized by two 31 man crews working 12 hour shifts around the clock. Slowed somewhat by rain, 3,000 cu yd of concrete were placed over 12 days. One hundred jacks were used in raising the slip forms.

The 100 ft dia tank rests on a 2 ft 6 in. thick slab. A 4 in. thick concrete dome that rises 12 ft is supported by the 35 ft high prestressed tank wall. Dome is designed for 25 psf live load. Tank slab, wall and dome are of 3,750 psi concrete.

Core wall concreting also was accomplished with slip forms, the pour requiring 50 hours and 78 jacks. Forms for the dome were supported by bar joists resting on temporary columns carried to the tank slab. Dome reinforcement consists of 4 x 4 wire mesh at the interior face and 7,880 ft of circumferential and radial #3 and #4 bars at the exterior face.

The core wall was prestressed circumferentially with a wire winding machine. It placed 22,800 lb of 0.162 in. dia wire (drawn to 0.141 in. dia) spaced along the 35 ft tank wall height. The stressed wires were covered with ¾ in. of pneumatic mortar.

Job quantities total 5,450 cu yd of concrete and 187 tons of reinforcing bars.

The Preload Co., New York, designed the tank. Whittle Contracting Co., Dallas, Texas, is the contractor. J. P. Ferrill is city engineer of Tyler, which engaged Wisenbaker, Fix & Associates, Tyler, Texas, as consultant.

CLAY FILLER is placed at waterstop to separate tank wall concrete from slab.

UNDER $4 PER SQ. YD. FOR CONCRETE WIDENING: Powered by a Jaeger "365" rotary compressor, this self-propelled, self-steering, one-man hammer knocks off old concrete lip curb under bituminous resurfacing, preparatory to 3′ widening. Two hand-held breakers, powered by same compressor, trim immediately behind. This machine, and an efficient widening spreader, made possible prices from about $4.50 to less than $4.00 per sq. yd. for 10″ thick concrete widening strip.

Why Jaeger "makes" more air per lb. of fuel

Using the same GM 6-71 diesel engine as other 600 cfm rotaries, a Jaeger delivers 600 cfm of air *at 150 rpm slower speed*. In 8 hours' full load operation this means 72,000 fewer revolutions, saving miles of engine piston travel and pounds of fuel. All operation is below the continuous horsepower curve, minimizing engine maintenance. As for the compressor unit, many Jaegers have logged more than 8000 hours without replacement of a single vane.

Comparable high efficiency (1700 rpm full load speed compared with others' 1800 to 2150 rpm) is characteristic of Jaeger 125, 250 and 365 models. Ask any Jaeger user—or see your Jaeger distributor for further information that will help you to reduce your air costs. For complete details, get Catalog JC-5.

2 TO 3 TIMES FASTER: In tunneling for water lines, with a 3″ auger, deflection due to varying air pressure formerly required drilling 2 to 3 times. Constant pressure by a Jaeger "125" rotary now does job in one drilling, averaging 1′ per minute.

ONLY 5 GALLONS OF FUEL PER HOUR: Jaeger "600" rotary operated at only 900 rpm to hold 100 psi pressure behind one heavy duty and one medium duty wagon drill. Result—a fuel consumption of 5 gallons per hour.

THE JAEGER MACHINE COMPANY

200 Dublin Avenue, Columbus 16, Ohio

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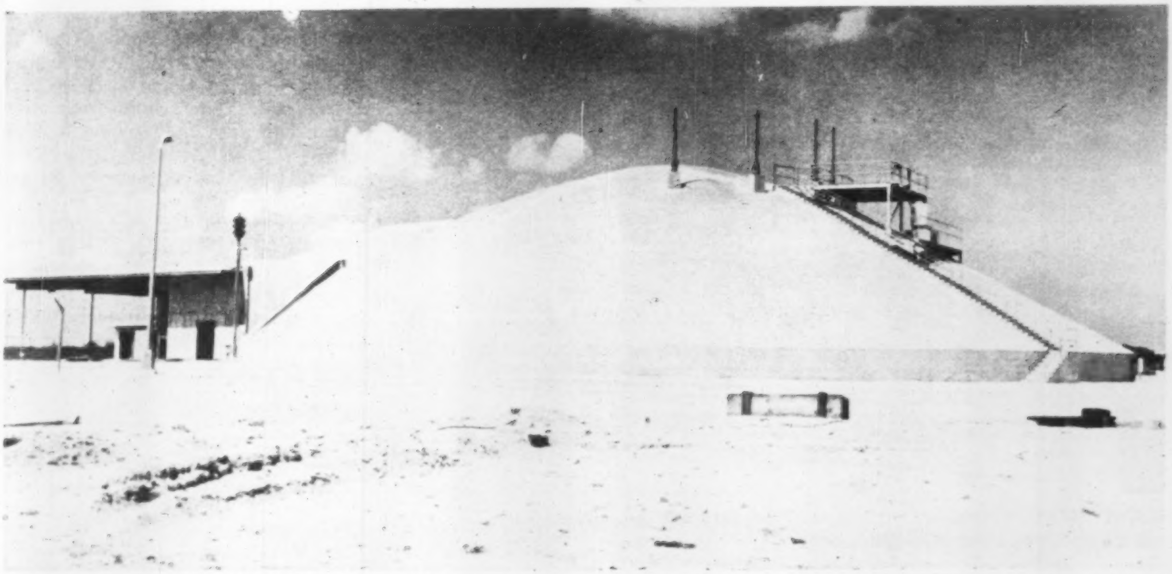
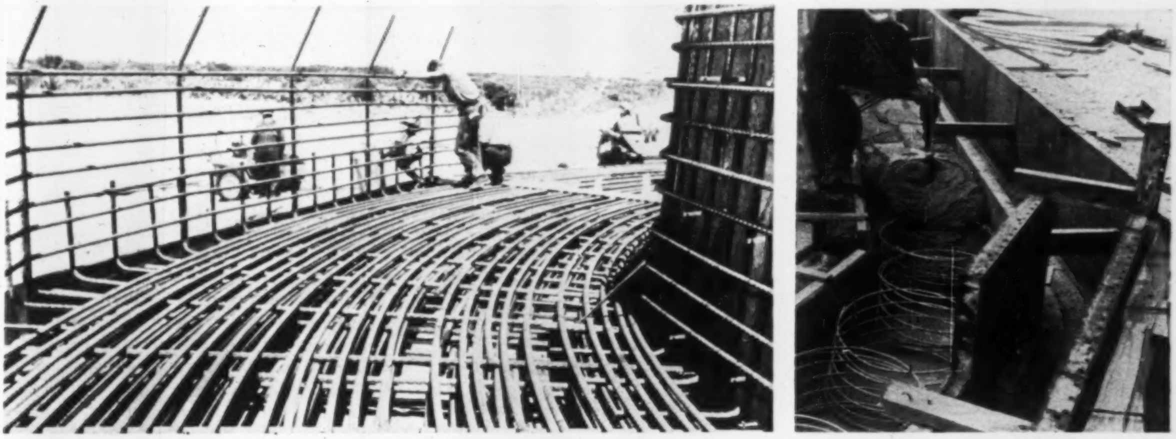


MISSILE TEST BLOCKHOUSE has 10 ft of sand fill and 4 in. of pneumatically placed concrete covering a 5 ft thick concrete dome. Blockhouse protects technicians and instruments from possible accidental explosions during static testing and the prelaunch period.



FOUNDATION RING is 19 ft wide and 3½ ft thick (left). Vermiculite concrete fill between foundation and wall (right) is designed to compress during blast load. Light steel framework at left of fresh concrete may fail under blast pressure.

Concrete Dome Protects Missile Men

Marvin J. Kudroff
Director of Engineering
Daniel, Mann, Johnson & Mendenhall
Los Angeles, Calif.

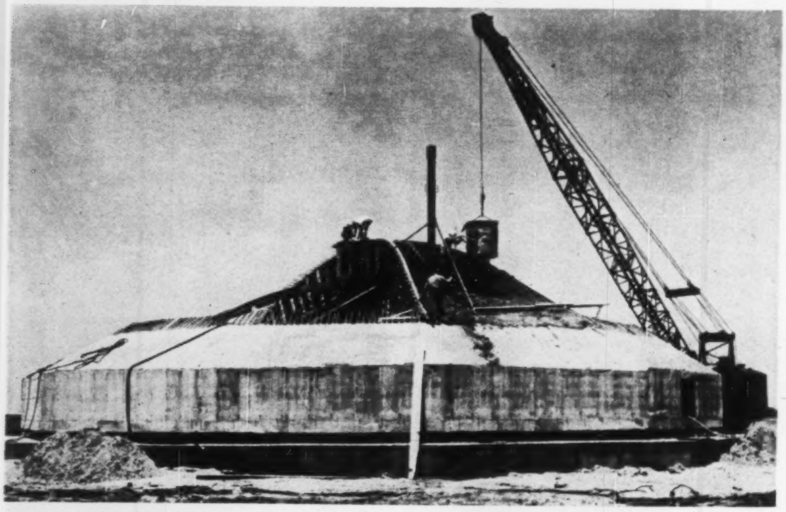
Concrete blockhouses at Patrick AFB, Cape Canaveral, Fla.—designed for impulse loadings of 1,600 psi—include unique advances in space age engineering. The 5 ft thick domes house vital instrumentation and test personnel during static and flight tests of missiles.

Design includes wall sections combining steel columns and vermiculite concrete. This was done with the expectation that under unusually large loads the steel will fail and the concrete will compress; yet the integrity of the structure will be maintained.

Although constructed some months ago, data on the blockhouses have just been released by the Air Force. First units were designed by Daniel, Mann, Johnson and Mendenhall for Convair in connection with their work on the Atlas intercontinental ballistics missile. Since then, the Corps of Engineers has constructed other blockhouses using the Convair unit as a prototype. Contractor for the first units was Paul Smith Construction Co. of Orlando, Fla. Later missile control centers have been built by J. A. Jones Construction Co., of Charlotte, N. C. (ENR Feb. 27, p. 49) This article describes in detail the first such blockhouses constructed.

• **High design pressures**—Located about 750 ft from the static firing and launch stands, the buildings house control and recording equipment essential during prelaunch or static testing. About 40 men are present during the testing or launching. They, together with the valuable equipment, must be protected from an explosion due to possible malfunction or intentional destruction of the missile. Such an explosion, which could occur in extremely close proximity to the blockhouse, might produce an explosion equivalent to 50,000 lb

HEAVY REINFORCING is used in haunch slab that tops vermiculite concrete and light steel framework set on the foundation slab.



DOME CONCRETE, 5 ft thick, is placed in six sections. Indentation between foundation slab and wall locates compressible section of wall assembly.

of TNT. Thus, the blockhouses have been designed for an impulse loading of 1,600 psi.

Due to its inherent stability and resistance to overturning, a concrete dome was selected as the type of structure to withstand best the extremely high blast pressure.

To satisfy space requirements, the inside radius of the dome was established at 42 ft 5 in. and the springline diameter at 60 ft. The springline was located 7 ft 9 in. above foundation top and 5½ ft above finished floor. Overall height at the center of the dome is about 18 ft above finished floor.

Thickness of the dome was established at 5 ft primarily for stability rather than stress. And the dome has about 10 ft of sand fill over it, with a 4 in. sprayed concrete slab over this. The sand fill was not considered to resist any of the blast forces—although it undoubtedly will absorb some blast energy. Thus, it is an additional safety factor.

All the design was done with conventional methods of analysis, tempered by engineering judgment. For example, the dome was designed by a dynamic analysis of a thin shell correcting for the actual thickness. Reinforcing steel is nominal inasmuch as the dome is always in compression. Blast loads were considered to act radially; and, although effects of unbalanced loadings were studied, the critical condition was blast pressure over the entire dome. Special design consideration had to be given to the section at the entry door to withstand blast, fire and gas infiltration.

• **Sectional construction**—The domes, constructed of 4,000 psi concrete, were cast in six sections. This necessitated use of a temporary support column at the center. The first pour included an 8 ft dia cap for the temporary column. This column is a 24 in. dia steel pipe, ⅜ in. thick, which rested on a 24x24x3 in. base plate. The column foundation consisted of a 23 ft dia concrete footing 28 in. thick, reinforced by No. 5 bars at 11 in. centers each way in the bottom of the slab only.

Foundation for the dome consisted of a 56 ft ID, 19 ft wide ring footing. The foundation is 3½ ft thick and is designed for a dead-load soil pressure of 3,000 psf. No additional footing area was necessary for blast pressure due to the short period of loading and the cushion provided between the haunch and the foundation.

• **Concrete cushion**—Between the foundation slab and the dome haunch is a light steel framework. A vermiculite-concrete-fill cushion ring was placed on each side of this steel framing, which supports the dead load of the dome. The framing is designed to fail under blast pressure, the vermiculite cushion allowing the dome to settle—which it must do under the high blast loads.

Considerable research was done on the use of the vermiculite. Result was use of a mix with one part portland cement to eight parts vermiculite aggregate.

The vermiculite pad is reinforced with cages of ¼ in. dia spiral steel rods. Each cage is 20 in. OD, has a 2 in. pitch, and includes 4 vertical spacer bars. The tests were conducted on the vermiculite, which is extremely compressible, using 6 in. by 6 in. high samples reinforced with 2% spiral reinforcing of No. 8 wire at ½ in. pitch. Design criteria were established from a load-deflection test.

The vermiculite fill retains its compressive strength after consolidation. And the cushion was designed to allow several blasts to occur without rendering the structure unusable.

Above the vermiculite concrete-steel framework section of the wall is a haunch slab. This is 12 sided rather than circular.

Reinforcing for the 12 ft wide haunch consists of four layers of 25 circular rings of No. 11 bars prebent, each layer of 25 having five groups of five bars at 4½ in. centers. An 8 in. space between groups was allowed for use of vibrators. Adjacent bar splices were staggered at least 2 ft 2 in. to avoid congestion. Spacers consist of No. 11 bars, in line, at 3 ft centers under each of the four layers. These bars, which are supported below by steel beams, were designed to support the reinforcing steel, concrete, and workmen.

• **Blast door design**—A unique design problem centered around the blast-re-

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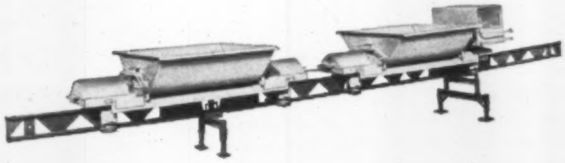

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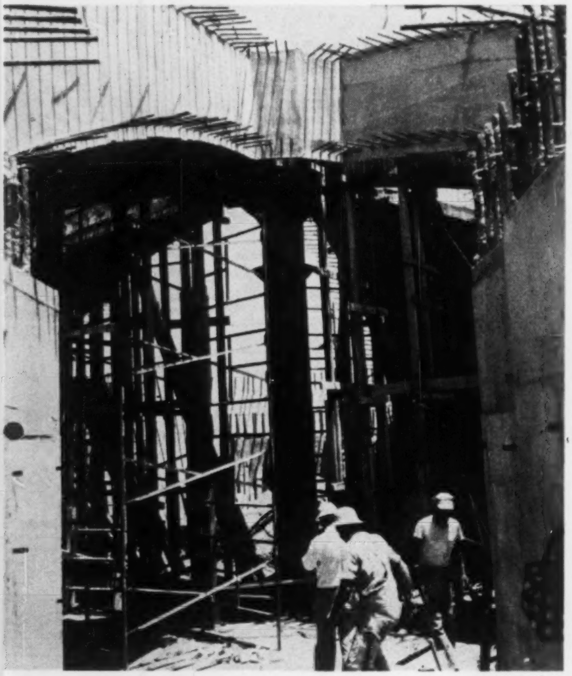
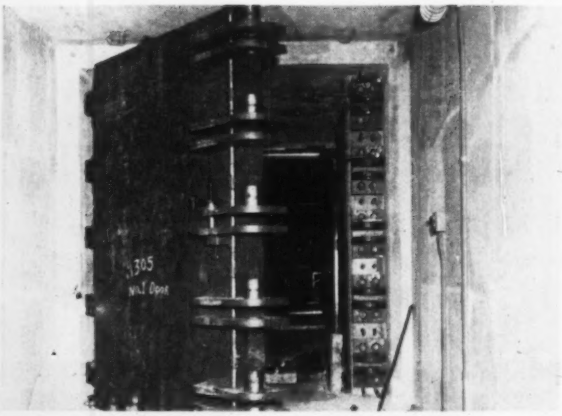
. . . Dome built for blast protection





STEEL DOOR weighing 5 tons protects blockhouse from blast and gas, yet can be operated by one man.

PIPE COLUMN provides temporary support for dome during concreting operations. It stood on a 23 ft dia footing.

sistant entry door. This required a 5 in. thick solid steel plate with 4 in. of insulation for fire protection and weighed almost 10,000 lb. The net opening is 6 ft by almost 8 ft. The door must resist blast forces and be gastight. And it also must be capable of being opened by one man.

A dynamic analysis, involving an inward force and then a 40% rebound force of short duration, was made. The door is designed to be stressed above the yield point. And both door and hinges can be removed and replaced if distorted out of shape.

- **Removable floor**—The floor, which was completely open below to allow for instrumentation cables and duct work, consists of removable and interchangeable 24x36 in. floor panels, which were designed to support a uniform load of 250 psf.

Weight was critical for these panels. Thus, they were designed in aluminum and weighed about 36 lb each. These panels are supported on a steel gridwork of 4 WF 13 beams, 6 WF 15½ continuous girders and ⅝x6 in. steel-bar columns.

The ceiling is suspended from the dome and supports both lights and ducts. Each of the 1¼ in. dia rod hangers supporting the ceiling is fixed at the top for stability.

Other design features of the domes were a 3 ft dia blast-resistant escape door and escape shaft, and blast-resistant dampers for the air conditioning system. Instrumentation tunnels and pits were provided with offsets and blow-out panels for blast protection.

Although the original criteria required blast-resistant windows for observation, the blast intensity was much too great to permit use of windows. Observation of the missile is accomplished with periscopes and by TV cameras on a stand above the sand fill.

A pioneering architect-engineer firm in the missile facilities design field, Daniel, Mann, Johnson & Mendenhall has been responsible for the planning, design and engineering of such projects as North American Aviation's Hot Test Acceptance Facility in Santa Susana, Calif., launching, test stands and other facilities at Edwards and Cooke AFB.

SANDFILL IS PLACED over concrete blockhouse by bulldozers. Sprayed concrete slab will cover entire assembly. The sand provides an additional safety factor.

You asked for it–we built it

Allison announces

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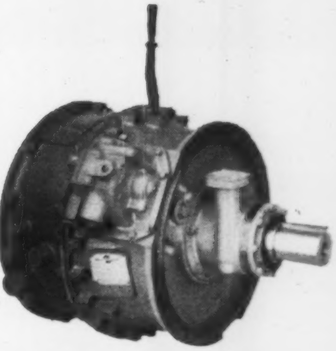

a new TORQMATIC Converter designed exclusively for power cranes, draglines and shovels.

Shovel operators are now convinced–a torque converter is the answer to faster work cycles–lower maintenance – higher profit on the job.

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Exclusive TORQMATIC variable-capacity design makes available 8 converter combinations for Diesel engines from 150 to 335 horsepower by interchanging only four parts.

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LEHIGH MORTAR CEMENT EXCELS AT FLORIDA STATE UNIVERSITY

1.

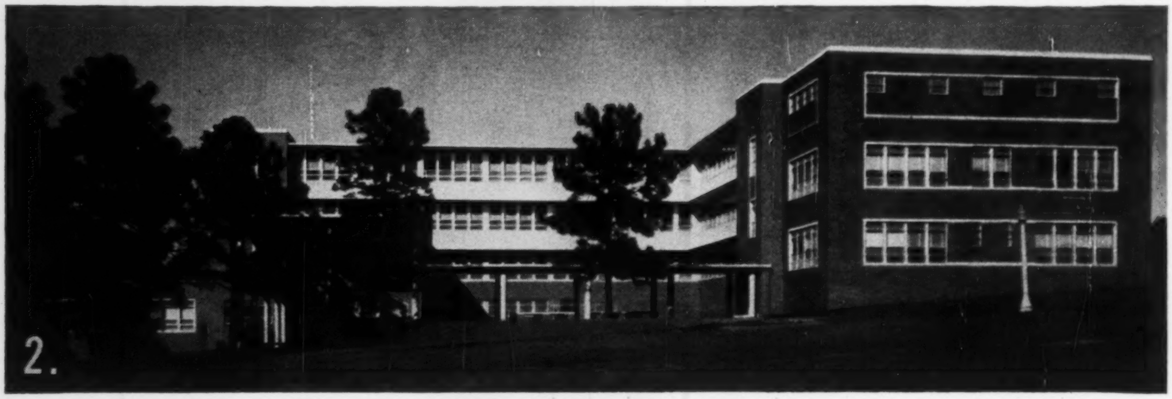
Contractors from all around the country continue to tell us of the excellent results they get with Lehigh Mortar Cement. This time the reports come from Tallahassee, where these new Florida State University buildings were recently completed.

Speaking of their work on the new men's gymnasium, Bear Construction Company said, "As on previous jobs, we were very well pleased with the way Lehigh Mortar Cement worked out. The yield was most satisfactory."

Lehigh Mortar Cement, used with brick, stone, block and tile, contributed to the excellent appearance of this new gymnasium.

Contractor:
Bear Construction Co., Tallahassee, Florida

Architect:
William B. Harvard, St. Petersburg, Florida, in association with Guy C. Fulton, Gainesville, Florida



2.

And Winchester Construction Company, commenting on the construction of the home economics building said, "We are completely satisfied with Lehigh Mortar Cement's yield, workability, and appearance in the wall. We recommend it to anyone."

Try Lehigh Mortar Cement on *your* next job, and discover its many advantages for yourself.

In this new home economics building, Lehigh Mortar Cement was used with brick and block to produce top quality exterior walls.

Contractor:
Winchester Construction Co., Tallahassee, Florida

Architect:
Yonge, Look and Morrison, Pensacola, Fla., in association with Guy C. Fulton, Gainesville, Fla.

LEHIGH
MORTAR
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LEHIGH PORTLAND CEMENT COMPANY

ALLENTOWN, PA.

- **Lehigh Mortar Cement**
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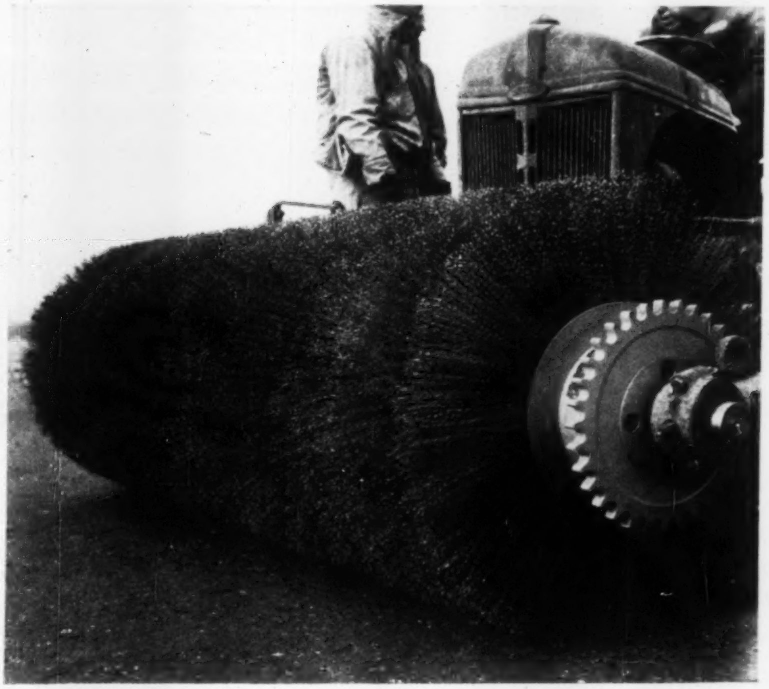
- **Lehigh Early Strength Cement**
- **Lehigh Air-Entraining Cement**



STEEL WIRE bristle sections are assembled and mounted on a standard sweeper.

Crimped Steel Wires Make Broom

Crimped steel wire bristles make up rotary street brooms now being distributed by the Newark Brush Co., which also will manufacture them later. Developed about three years ago in Denmark (patent pending), the new broom is quoted as having 6 to 15 times the life of the more conventional fiber or bamboo brooms, with initial cost only 2 to 2½ times greater. As one example, the 36 in. dia wire bristle broom is said to be good for 5,000 miles of use.

The new broom is made up of sections, or wafers, assembled on a core of four steel pipes. Assembly consists of slipping sections and spacers onto the core, with no special skill required. No winding in of the bristles, as with fiber, is necessary. Each section has a key projecting into its center opening that keeps the section from spinning around the core.

A replaceable spindle bolts onto the end of the core, and the broom is ready to be mounted on standard sweepers in the regular way.

The round steel wire bristles are crimped along their length, two for one, give them stiffness. The crimping also forces the bristles to spread out so that after a few passes with the sweeper, the slight space between sections is filled in along the surface of the broom.

The broom can be used for street sweeping, airport cleaning, snow removal and an construction jobs, the company reports. The firm also cites that there have been some 900 installations of the broom in Denmark to date. All standard sizes are available. Newark Brush Co., Kenilworth, N. J.

Roller Steering Mechanism Assures Full Compaction

A new 1½ ton power roller has center-pivot steering that enables both rollers to turn to give improved tracking of the rear roller.

The steering feature combined with equal-width rollers both eliminates lap marks and affords full compaction, according to the manufacturer.

The Midland 150 is powered by a Briggs and Stratton 9 hp engine. Both rollers are equipped with spray bars and cocoa mats. Empty, the roller weighs 1,480 lb; with water ballast, 2,860 lb. Midland Products Co., Midland Park, N. J.

(New Products continued on page 50)

HOW TO HANDLE
WET JOBS

#42 of a Series

FINISH 4 MONTHS AHEAD, THANKS TO WELLPOINT SYSTEM

Project: Ada Bridge, Ada, Mich.
Contractor: Brown Brothers

Original Highway Department plans called for 6 cofferdams—one for each bridge pier. But Brown Brothers devised an alternate method, entailing much less time and money.

- They used a Griffin wellpoint system, in conjunction with a partial L-shaped steel-sheeted enclosure (see photo). Handling 12,000 gals per minute, the system quickly dropped and held ground water level 14 ft below the adjacent river.
- Ready-mix concrete trucks were able to roll across the site and pour concrete directly into the footing forms. Result: the job was finished 4 months ahead of schedule, beating previously anticipated Spring flood problems.
- Before paying high costs on *your* wet work, it will pay you, too, to investigate wellpoints. Call Griffin.

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Fenestra
SCHOOL DESIGN
NEWS

LOOK WHAT FENESTRA WINDOWS DO FOR MODERN SCHOOL DESIGNS!

Fenestra® Intermediate Steel Windows are selected by architects and school officials for many of the finest and best-looking schools in America. The reason is not appearance alone.

They provide *more and better daylight* for school classrooms. Their slim, but strong, steel sections give you *more glass area* and *clear-vision view* per window opening. Fenestra Windows are engineered and precision built to be rigid and rugged without excess bulk.

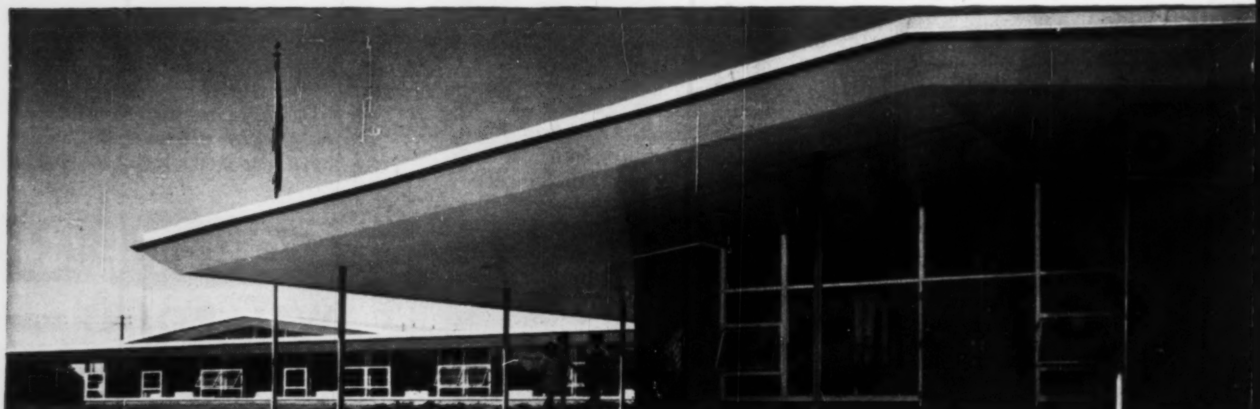
You get *better ventilation,* too. Project-out vents form weather-protective canopies over the openings. Tilt-in vents bring in abundant fresh air *without drafts* . . . shed rain outside. All vents open smoothly and easily with a finger touch.

You *save on maintenance.* Sturdy hardware and steel-strong window members assure years of trouble-free service. Cleaning and screening are done safely and economically *from the inside!*

New Fenestra FENLITE Finish

Fenestra Intermediate Windows are now available with the New FENLITE Finish that gives longer window life *without painting* plus a distinctive new window beauty. The FENLITE process is an exclusive Fenestra development based on years of experience and research with corrosion-resistant finishes for steel windows. It saves you the cost of maintenance painting year after year.

Inside and out, Fenestra Intermediate Steel Windows give your schools modern window beauty, more daylighting and better ventilation. Specify them for your new school buildings. Mail the coupon, today, for complete information or call your local Fenestra representative — listed in the Yellow Pages of your telephone directory.



Sam Houston Elementary School, Port Arthur, Texas, features Fenestra Intermediate Steel Windows. This outstanding school demonstrates the functional beauty of their slim, modern design and the pleasant classroom atmosphere created by their better daylighting and ventilation. **Associated Architects:** Caudill, Rowlett, Scott & Associates, Bryan, Texas; Oklahoma City, and J. Earle Neff, Port Arthur, Texas. **Contractor:** Schneider Construction Co., Houston, Texas.

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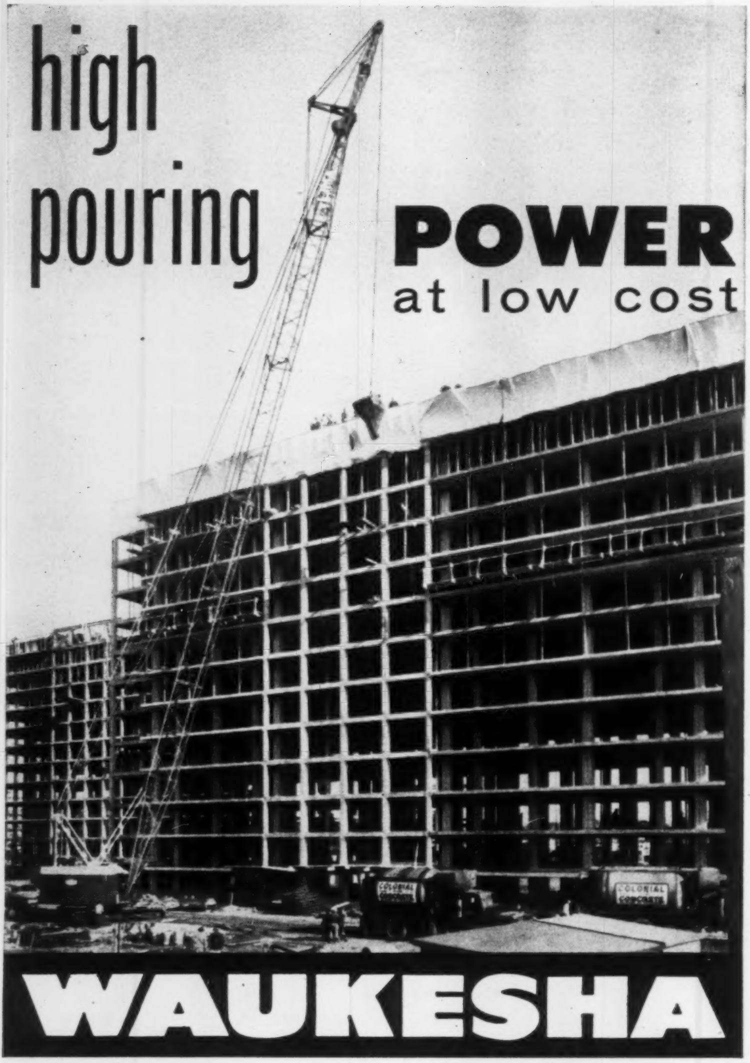

● Concrete is moving here. And a Waukesha-powered Lima crane with a 190′ boom is moving it. Using a 2-yd. concrete bucket, between one and two full floors a day are being poured, depending on truck delivery. The co-operative housing project is in Brooklyn's Sheepshead Bay area. Costaldo Construction Corp., Bronx, New York, own the unit. Its overhead valve engine—Waukesha Super-Duty WAK—is built to deliver greater power per cubic inch displacement. And it is rugged in every detail, oil pan to head. Renewable wet-type sleeve cylinders, and other "complete rebuildability" features give easy, economical maintenance. Get Bulletin 1554.

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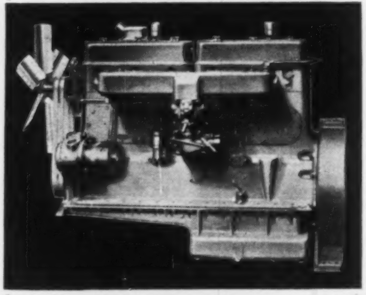

Waukesha WAK Gasoline—six cyl., 6¼ x 6½" bore & stroke, 1197 cu. in. displ. (Also, in normal or turbocharged Diesel models.)

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NEW YORK TULSA LOS ANGELES

380

Vapor-Barrier System Protects Metal Roofs

A fire-resistant vapor-barrier system of vinyl plastic has been developed for use in built-up roof installations. Known as Reflecto-Barrier, it needs no heat application; it is attached to the structural roof decking with a cold-applied rubber-base adhesive material. The film is packaged in "easy-to-handle" rolls.

This roof-deck system is claimed to provide an economical vapor barrier and water seal, and to slow the separation of roof insulation from steel decking in the event of a flash fire. Reflecto-Barrier Sales Co., Inc., P.O. Box 1452, Hartford, Conn.

Light Trenching Machine Aimed for One-Man Jobs

A self-propelled light trenching machine, the Model C Ditch Witch, is powered by a 7 hp air cooled gasoline engine and will dig trenches up to 2 ft in depth, in widths of from 3 to 6 in. Trenching speed is about 4 fpm.

Completely mobile under its own power, the trencher is easily handled on the job by one man, according to the manufacturer.

The machine has been designed for installation of underground wiring, lawn sprinkler systems, gas services, water lines, telephone services, street lighting and signal systems. Charles Machine Works, Inc., 640 Birch St., Perry, Okla.

. . . New Products Briefs

- **Foamed resin**—"Dulux" foam resin R-42, a polyester resin that is used to to make rigid urethane foams of heat insulation and sound proofing, is being marketed. Capable of being "foamed in place", the resin can be prepared in low density foams for an ingredient cost of less than six cents a board foot, the manufacturer claims. E. I. Du Pont de Nemours and Co., Wilmington, Del.
- **Air conditioners**—Production of new air handling units with a low pressure sprayed coil and high pressure dry and sprayed coil has been announced. Called the "climate changer", the unit is available for commercial institutional and industrial installations. The Trane Co., La Crosse, Wis.
- **Insulation**—A perimeter and cavity wall insulating material of expanded polystyrene, called "Scorbord", reportedly can be fabricated to size without tools and in very little time. The labor saving is made possible by marked striations that have been cut the length

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Typical single seal coat texture, using McConnaughay Emulsified Asphalt

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1. *No flow* on steep grades and high-crown highways.
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5. *Strong adhesion* to treated pavement surface.
6. *Resistance to softening* and loss of cover on hot days.
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For further information, write for Seal Coat Specification No. 7.

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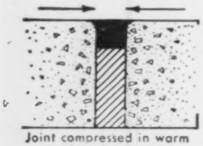
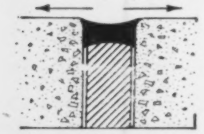

Joint compressed in warm weather temperatures.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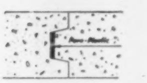
JET FUEL RESISTANT TYPE

Servicised hot poured Para-Plastic JF is a specially compounded material with all the stability, plasticity and sealing characteristics of regular Para-Plastic, and in addition is unaffected by jet fuel and solvents. It is used for sealing pavement joints on airport runways, taxi strips and aircraft parking aprons.

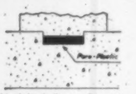
PARA-PLASTIC SEALING STRIPS

molded Para-Plastic

For sealing keyed construction or contraction joints in vertical walls. Maintains bond with concrete at temperatures to sub-zero. Simple installation insures a moisture-tight seal of the joint.



Keyed construction joints in vertical walls and horizontal slabs.



Molded Para-Plastic sealing at a footing.

Para-Lateral Strip

Designed for sealing against seepage in vertical construction and contraction joints in foundation walls, retaining walls, tunnels, abutments, wing walls where back filling against one side of the structure is required.

Get complete information on Servicised Para-Plastic sealing compounds. Write for the Servicised Catalog.

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of each board at the 3, 12 and 20 in. width marks. Thus, the installer easily can snap off desired widths, according to the manufacturer. Dow Chemical Co., Midland, Mich.

- **Aerial basket**—An insulated aerial "worker" basket has been designed for use as an attachment on Versa-Lift "400" truck-mounted cranes. The glass-fiber basket is attached to the self-leveling elevator platform through six insulators. Teale and Co., Box 308, Omaha, Neb.

- **Double glazing**—An all-glass, insulating double-glazed window unit, known as "GlasSeal Thermopane," comes in five standard sizes. The unit is manufactured from two lights of LOF double-strength, A quality sheet glass and has a nominal air space between the sheets of 3/16 in. Libbey-Owens-Ford Glass Co., 608 Madison Ave., Toledo 3, Ohio.

- **Roofing shingle**—Ability to stand winds of gale force is claimed by the manufacturer for a new asphalt roofing lock-shingle. Its construction incorporates two locking tabs that extend at an angle from the bottom of each unit. These fit diagonally into receiving slots on adjacent shingles during installation. The snub fit is reported to result in a weathertight roof. Keasbey and Mattison Co., Ambler, Pa.

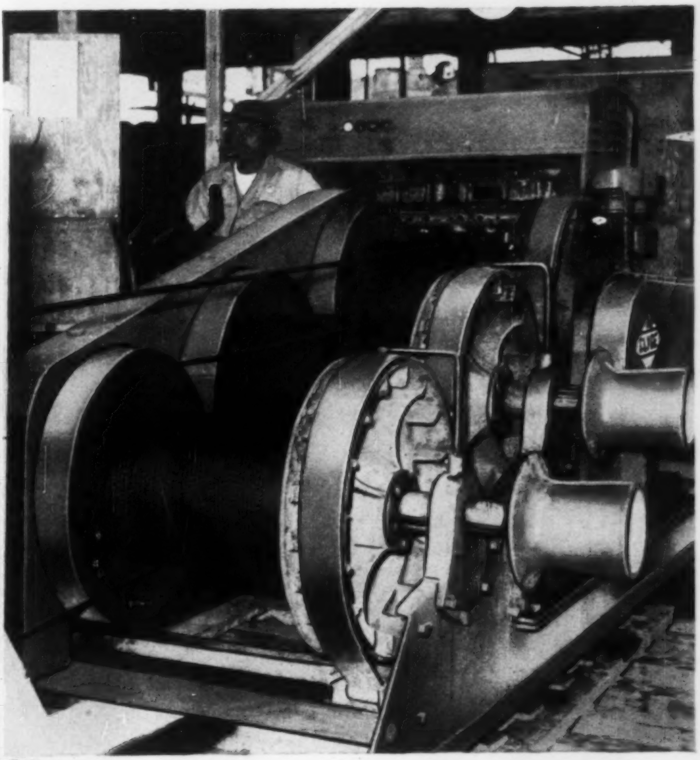
- **Shear heads**—Stock shear heads, to be used with structural steel or reinforced concrete columns, offer substantial savings in formwork and height-reducing advantages, claims the manufacturer. Mushroom heads and drop panels are eliminated by "Shlagro Stock Shear Heads", which allow the steel to be completely embedded in the floor slab. Shlagro Steel Products Corp., Somerville, Mass.

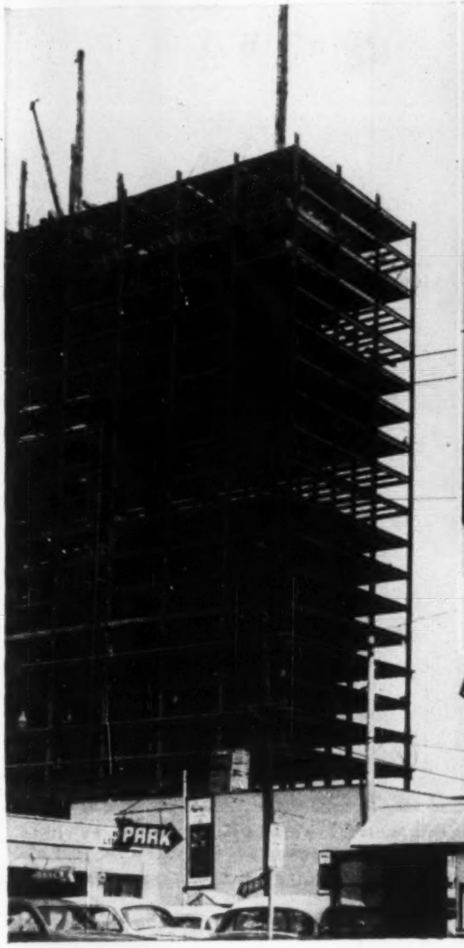
- **Packaged buildings**—A line of prefabricated industrial buildings with prestressed rigid frames is on the market. These buildings, which are useful for bulk storage, can be furnished in any width or length. Cost of an average size building, excluding conveyors, is about 10 to 12¢ per cu ft of storage space available. Beers Steel Building Corp., 17 William St., Newark, N. J.

- **Bonding agent**—"Tile-Weld" is a colorless emulsion formulated for use as an admixture. Used in grout, it improves strength, plasticity and bonding properties. Larsen Products Corp., 4933 Elm St., Bethesda 14, Md.

- **Grating**—New grating consists of crimped bars, roll locked into bearing bars to form a solid one-piece unit that is spark-proof, rust-proof, corrosion-resistant and reversible. It is available in a variety of architectural colors. Kerrigan Iron Works, Inc., Nashville, Tenn.

Operator J. L. Cartwright rates this Clyde hoist outstanding in reliability and smooth operation after two continuous years of service on Southland Center project.





Clyde Hoists speed construction on Southland Center in Dallas

In the construction of Dallas' ultra modern Southland Center, progress is the day's main order of business. This block-size development is the site of building projects which will change the skyline of downtown Dallas.

Hub of the development is Southland Insurance Company's 42-story office building, being built by the J. W. Bateson Construction Company. A Clyde 3-drum gasoline-powered hoist is the basic materials-handling equipment credited with lifting a gigantic volume of building materials over the last two years. Cost of repairs and maintenance on the 5-year-old hoist is reported as "almost nil."

On the Southland development, as on building projects the world over, the reliability and smooth operation of Clyde hoists—gasoline, diesel or electric powered—help keep progress on schedule, cut costs and eliminate stoppage in materials-handling. These hoists employ the newest and most thoroughly practical design advantages to assure continuous, high-speed operation and long, trouble-free life . . . advantages that are illustrated and described in special bulletins available upon request.

Check with Clyde. Find out why Clyde hoists are the money-wise choice for your materials-handling problem. Write for your copy of Bulletin 4-M.

Submit your equipment requirements to Clyde engineering specialists for detailed recommendations.

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CLYDE IRON WORKS, Inc.
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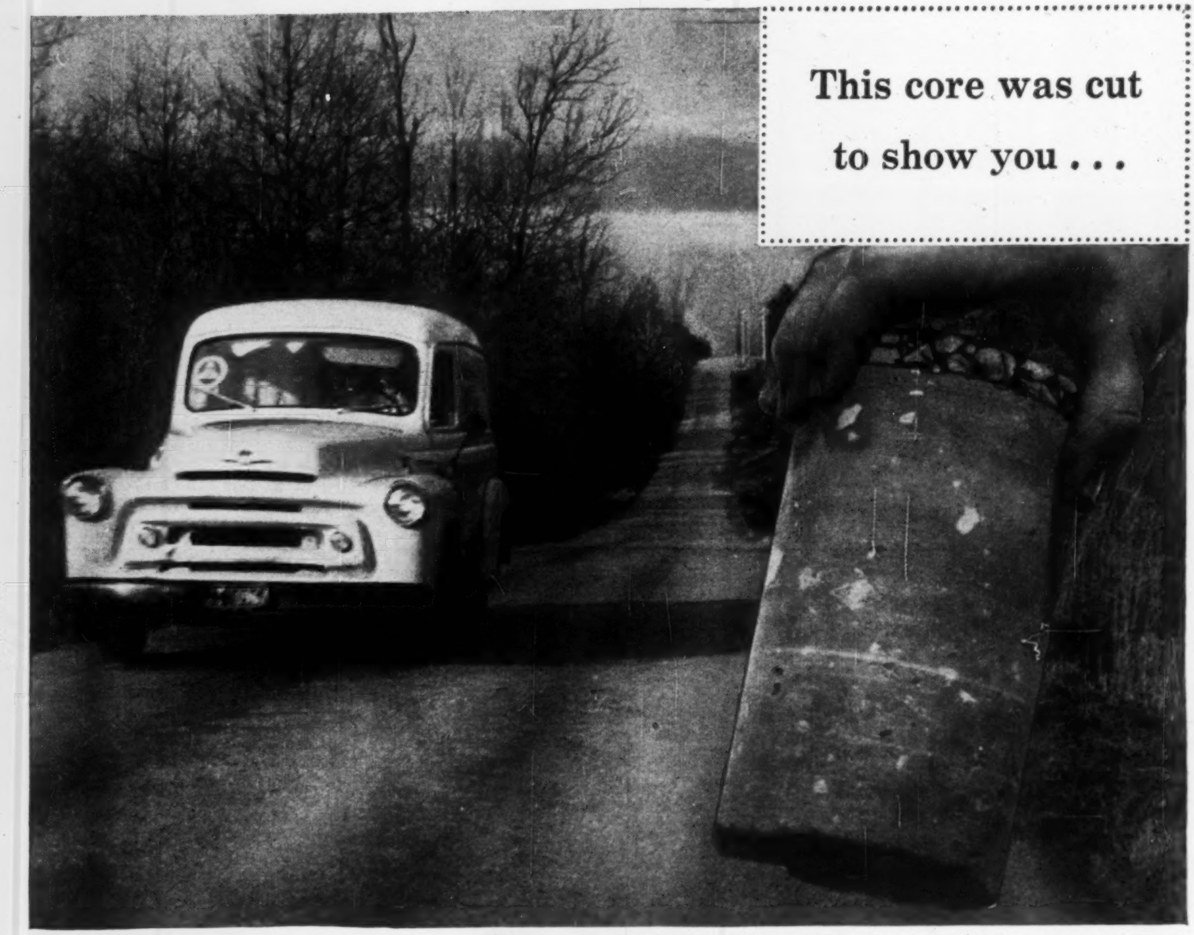
HOISTS : DERRICKS : WHIRLEYS : BUILDERS TOWERS
UNLOADERS : CAR PULLERS : ROLLERS

This core was cut to show you . . .



88% stronger today! *In 1958 a core cut from this road by a commercial laboratory tested 849 psi. Strength 11 years ago was 452 psi. Twelve per cent cement was used with a silty-clay soil.*

11 years in use on this Madison County, Tennessee, road

...soil-cement pavement grows stronger year by year!

Core tests prove it on roads everywhere. Soil-cement is stronger inch for inch than any other paving material short of concrete.

Here's one low-cost pavement that actually grows stronger with age. It has beam strength, too. It spreads the load over the subgrade. You'll never have potholes, washboarding or soft spots with soil-cement roads. Maintenance costs stay low.

And first cost is low, too! (In most cases 75% of your materials are free!) You mix with portland cement almost any type of soil including any old road surfacing. After the mixture hardens add a bituminous surface. You get a pavement good for 20 years plus.

It's the fastest-laid pavement there is. Well-organized crews have built two miles a day with modern road-building equipment. Today's engineers are making soil-cement America's fastest-growing, low-cost pavement. *Write for free booklet, "Soil-Cement Pavement."* Distributed only in U.S. and Canada.

Low cost . . . it's the 20-year-plus pavement for

ROADS • STREETS
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MODERN
soil-cement

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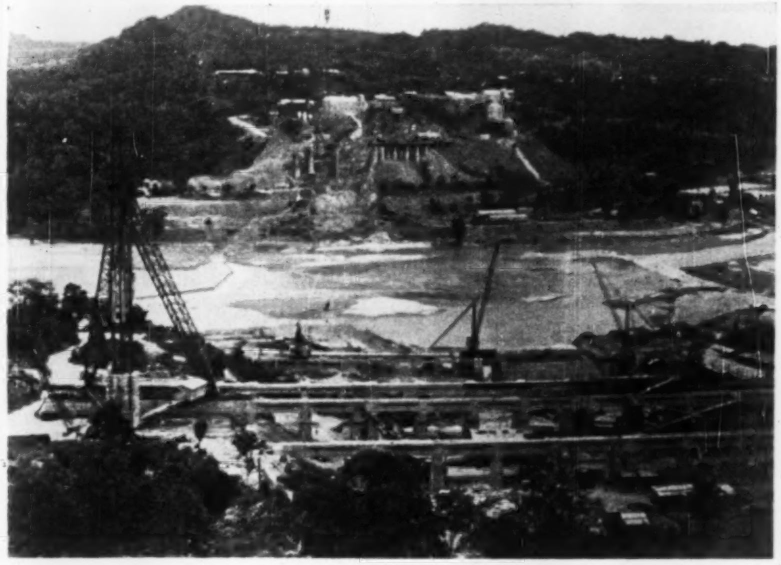
Dept. 5a-17, 33 West Grand Avenue, Chicago 10, Illinois

A national organization to improve and extend the uses of portland cement and concrete

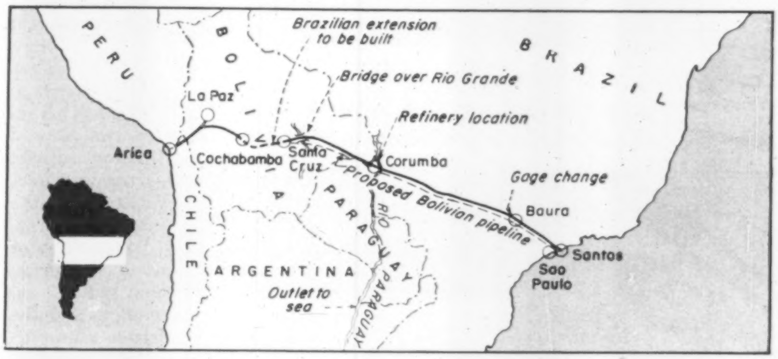
International



Cableway Towers Travel on Viaducts

Concreting of India's Rihand Dam is under way using tail towers that run on the concrete viaducts pictured in the foreground. Across the river to the right of the stationary head towers is another column supported track apparently serving the concrete mixing plant off to the right.

Rihand will be a 296 ft high concrete dam, 3,065 ft along its crest, that will impound 8.6 million acre-ft of water. Its construction will require 2.25 million cu yd of concrete. A 10 ton cableway will place concrete in the bottom portions of the dam, while two 20 ton cableways, spanning 3,100 ft, will place the upper monoliths. The concrete plant can dispense 4,500 cu yd a day from 4 yd tilting mixers. Concreting began in November of last year and the multipurpose project is to be completed in 1961.


PERU
BOLIVIA
BRAZIL
CHILE
ARGENTINA
PARAGUAY
Brazilian extension to be built
Bridge over Rio Grande
Refinery location
La Paz
Arica
Cochabamba
Santa Cruz
Corumba
Proposed Bolivian pipeline
Gage change
Baura
Santos
Sao Paulo
RIO PARAGUAY
Outlet to sea

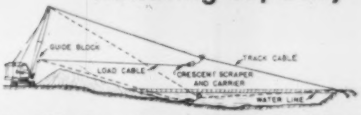
Last Link in Trans-continental Railroad

After nearly 20 years of diplomatic chess-playing and more than one year of serious governmental haggling, Brazil and Bolivia have patched up their differences on an old oil prospecting treaty that called for Brazil to build a railroad from Corumba, Brazil, to Santa Cruz, Bolivia, in exchange for the rights to search for oil in an enormous Sub-Andean slice of Bolivian territory.

It took Brazil nearly 19 years to build the existing part of this railroad over rough and wild terrain. Now, a deal has been signed to give Brazil ex-

the SAUERMAN METHOD...
extends the reach of your crane

the CRESCENT SCRAPER...
increases its handling capacity


GUIDE BLOCK
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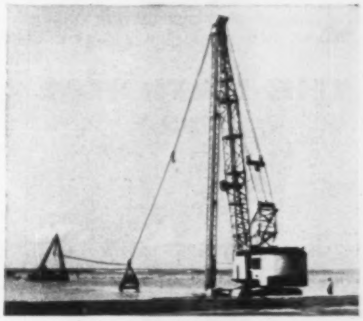
CRESCENT SCRAPER AND CARRIER
WATER LINE

Use This Fast, Economical Method for:

- Cleaning Ponds
- Trenching Streams
- Sludge Removal
- Cleaning Under Bridges
- Building Reservoirs
- Beach Construction

This Indiana contractor used the track cable method with a 1½-cu. yd. Crescent Scraper to trench across a river. After the water main was placed, the scraper backfilled the trench.



Boom support enabled this crane to use a larger Crescent. After a sub-grade of coral was placed, the 4-yd. scraper was reversed and used to grade the beach.

Get facts on how the capacity of your crane can be increased up to 50% or more by replacing your dragline bucket with a Crescent Scraper. Give us make, model and boom length and we will tell you the largest size Scraper your crane can handle. Field Report 228 and Catalog J give more information on Scrapers with cranes.

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632 S. 28th STREET
BELLWOOD, ILLINOIS

This National Torque Converter helps the earth mover to give the job "Everything it's got!"

For 15 hours every working day this 7-yard drag line, owned by Genet & Huffstuttler Company, strips overburden in the Beach Creek area, near Greenville, Kentucky.

A schedule like this is mighty tough on both men and equipment; but the punishment is lightened by the National Torque Converter, that absorbs and cushions every shock that takes its toll in operator fatigue, or shortened equipment life.

The National Torque Converter makes another very important contribution, too. It *takes in* power with the engine working in its most efficient speed and output range. It *delivers* the power at speeds and torques best suited to each specific operation.

In direct-drive machines, the pull available on the bucket depends on the torque capacity of the engine, with a possible "boost" from inertia. If a bucket encounters a heavy load, the pull increases up to the engine's torque capacity . . . but once this point is reached, either the operator eases off, or the engine stalls!

With a torque converter on the same load, the pull increases steadily, up to two or three times the torque available from the unaided engine. The pull is smooth as velvet . . . as though it were delivered by a giant elastic band. The engine cannot stall, and line breakage and boom overload are virtually eliminated.

National Torque Converters are available as standard equipment on practically all of the leading shovels and drag-lines, and "packaged" with the engine of 16 builders. The range of sizes and types takes care of inputs from 100 to 1000 hp, under a great variety of working conditions. For further information just write:

THE NATIONAL SUPPLY COMPANY
INDUSTRIAL PRODUCTS DIVISION
Two Gateway Center
Pittsburgh 22, Pennsylvania

ploration rights in return for a promise to extend its Corumba-Santa Cruz Railroad line 136 miles to a point approximately 62 miles from the Bolivian mountain town of Cochabamba.

When the extension link is finished, South America finally will have something many have dreamed about—a railroad link across the continent from Chile to Brazil.

Much of this trans-continental railroad is completed. The 136 mile section Brazil now has to build will be the last link in a railroad chain from Rrica, Chile, to the village junction near Cochabamba, connecting Santa Cruz, Bolivia, to Corumba, Brazil, and on to the big Atlantic port of Santos, Brazil.

Brazilians figure that this final railroad extension will cost them roughly $25 million. The job will be a tough one with at least one big river to cross, the Rio Grande, and steep grades into the Andes mountains to content with.

The bridge being built over the Rio Grande has a steel span of 4,570 ft and will be founded on piles to be sunk to depths up to 130 ft. Cia. Subra, a Brazilian engineering firm, will do the job with technical help from Volta Redonda, Brazil's government steel mill, and Namur, a Belgian structural steel company. Completion date has been set for late 1958 or early 1959.

The trans-South American Railroad will have one-meter gage track all the way from Arica, Chile, to Baura, Sao Paulo State. Baura is a big Brazilian railroad junction for the City of Sao Paulo, where the track changes to 1.1 meter gage for the short haul down to Santos. Much of the lighter traffic, however, is hauled from Baura to Rio and Santos by truck over paved highways.

• **Other construction involved**—This recent Bolivian-Brazilian oil deal should trigger plenty of construction activity in Bolivia, Brazil and possibly Chile, local engineers say. Right now, the Brazilian-built railroad into Santa Cruz, Bolivia, can carry only a maximum of 25,000 ton 30,000 bbl. of petroleum per day. Oil experts claim that the oil zone Brazil will be developing and the zone to its north could have a producing capacity many times the railroad's limit.

Part of the signed agreement calls for Brazil to build a pipeline from the port of Santos to Corumba in Mato Grosso State—a distance of nearly 930 miles—when, and if, oil production in the new Brazilian oil zone reaches 40,000 to 50,000 bbl daily production capacity. This will be an enormous task on Brazil's part, especially when construction teams get into the rough, jungle state of Mato Grosso. Bolivia, too, will have to build a section of pipeline from the Santa Cruz terminal for connection at Corumba, Brazil, on the Paraguay River.

Brazil also has plans for a 5,000 bbl per day refinery in Corumba. This river port will provide the entire underdeveloped area of southwestern Mato Grosso with considerable industrial and agricultural stimulus, Brazilians claim, pointing to the fact that in the not too distant future Corumba will be Brazil's western transportation hub with a direct outlet to the sea down the Paraguay River, in addition to the Atlantic and Pacific rail connections.

Chile long has hoped to build up the port of Arica to compete with some of Peru's ports. When the railroad connection goes through on schedule the Chileans are expected to do considerable work on the port facilities at Arica.

Access Road To Dez Dam

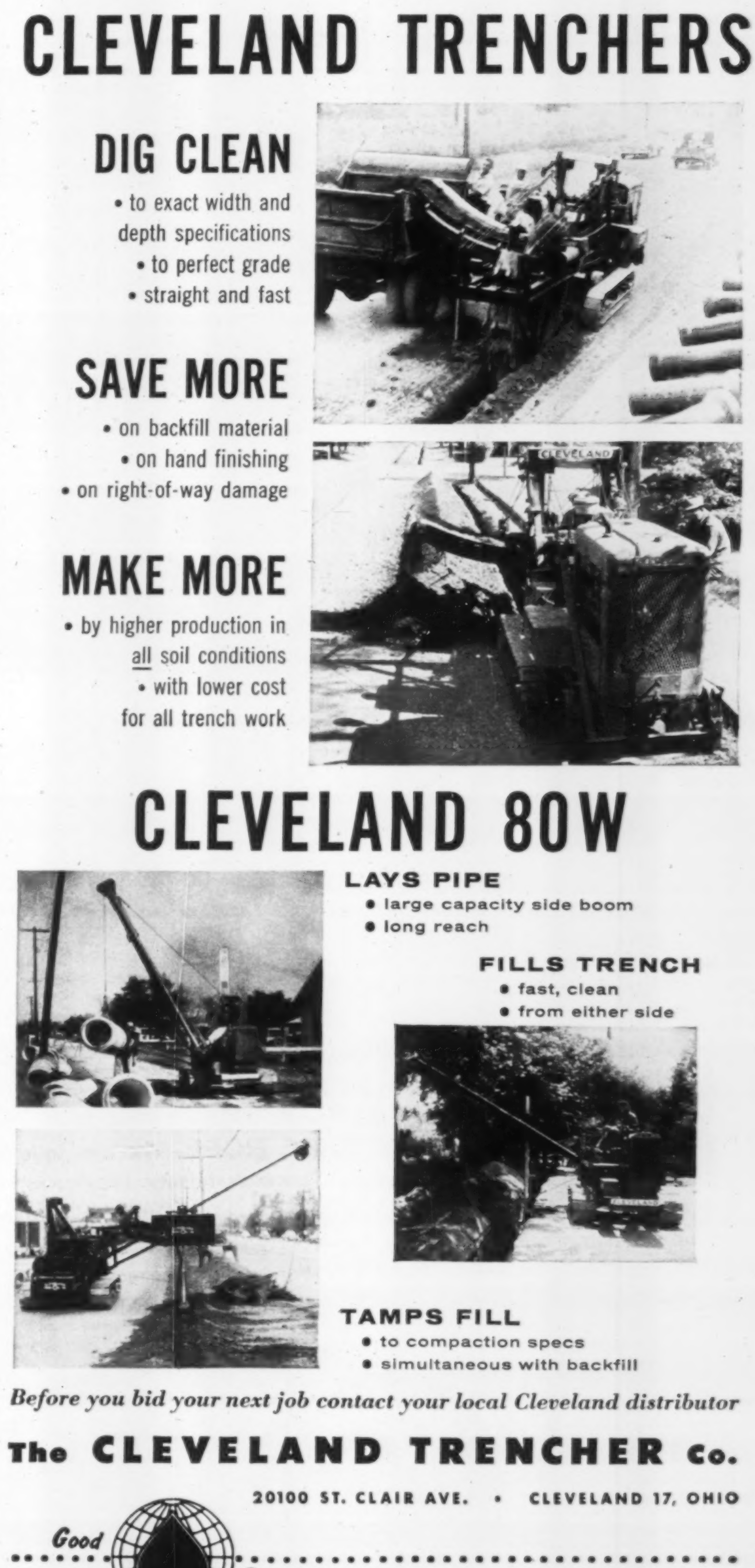
The Plan Organization of the Iranian government has awarded a $4 million contract for an access road to Dez Dam, now being designed as a 620 ft high thin arch. The award is the first in connection with the big dam project, which in turn is the first of a series of multipurpose river control structures planned for the Khuzestan region in southwestern Iran. This is the area surrounding oil-famous Abadan.

Morrison-Knudsen International, San Francisco, received the award and started work this month. The difficult road, requiring several tunnels, is to be completed in 1959.

Electroconsult of Milan, Italy, is designing the tall dam on the Dez River, under the guidance of Carlo Semenza. A. A. Meyer, former chief civil design engineer of the Tennessee Valley Authority, and Guido Oberti, director of Instituto Sperimentale Modelli E Struttture (agency to carry out model studies), are also consultants.

All of the above firms are working under the direction of Development & Resources Corp., New York, which has been engaged by the Plan Organization to draw up and carry out an economic development plan for the 58,000 sq mi Khuzestan region. The scheme will rely heavily on water resources projects, but will include other public works as well as industrial facilities. DRC is headed by David E. Lilienthal and Gordon R. Clapp, former chairmen of TVA.

Thus far, the Plan Organization has appropriated $32 million from oil revenues to carry out the Khuzestan development, exclusive of the Dez River project.



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• to compaction specs
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Tough Road Job

Quicksand, floods complicate Wyoming project

Unusually difficult conditions, including quicksand in river bottom and the possibility of spring flood washouts, confront the contractor on this grading, draining and surfacing job for the Wyoming Highway Department. The project includes construction of four continuous steel plate girder spans over the Powder River, and miscellaneous work on 1.212 miles of the Sussex Linch Road in Johnson County, Wyo. John T. Jobe is resident engineer for the Wyoming Highway Dept. at Buffalo, Wyo.

The $275,068 award to J. E. Englands Sons, Inc. is 5.5% below the engineer's estimate and 11.3% below the high of nine bids.

The contractor furnishes all materials. He may not use the existing or new bridge for hauling embankment or surfacing materials. At his own expense and risk, despite the possibility of spring flood washouts, he must provide and maintain an estimated 3,200 cu yd of temporary fill, with pipes to carry normal river flow. Length of fill across a quicksand river bottom is approximately 300 ft.

Concrete specifications are: Class A, 4,000 psi, 430 lb total aggregate per sack; Class B, 3,000 psi, 500 lb total aggregate per sack; and Class C, 2,500 psi, with 590 lb aggregate per sack, all to test at 28 days.

Minimum wages on the job include: master finishers on concrete pavement, structural steel workers and semi-skilled laborers, $1.80; skilled labor, $1.35; common laborers, $1.00.

1C	J. F. Englands Sons, Inc., Rapid City, S. D	$275,068
2	Etlin E. Peterson, Casper, Wyo	284,987
9	Big Horn Constr. Co., Sheridan, Wyo	310,160
EE	Wyoming Highway Dept., Buffalo, Wyo	291,061

Bids: 1-9-58 Items	Unit	Quantity	Unit Prices 1C	Unit Prices 2
Excavation	cy	55,200	$0.25	$0.33
Mile haul	cy mi	55,000	0.15	0.14
Roller oper, sheeps foot	hr	244	10.00	12.00
equipment	hr	49	12.00	15.00
pneum tired	hr	16	10.00	15.00
smooth steel	hr	5	15.00	20.00
Tamping, mechanical	hr	240	6.00	8.00
Embankment, special	cy	11,000	0.40	0.45
Stripping	cy	2,750	0.20	0.10
Excavation, pipe culverts	cy	26	2.00	4.00
Old road obliterate	mi	0.20	1,000	500.00
Water	Mgal	2,035	2.00	1.50
Surfacing material haul	t mi	10,800	0.10	0.12
Crushed gravel BC 1 in. max	t	2,800	1.13	1.20
Asphaltic material MC 3	t	30	50.00	40.00
prime	t	33	50.00	40.00
Cr gravel surf ½ max	t	365	8.00	3.50
RCP, std., 18"	lf	300	5.00	6.00
36"	lf	522	14.00	17.00
FE sect, 18"	ea	12	50.00	60.00
36"	ea	2	150.00	175.00
Riprap, class 1	cy	245	15.00	15.00
2	cy	1,000	4.00	6.00
grouted	cy	25	25.00	25.00
Fence, barbed wire, 5 wire	lf	500	0.20	0.30
woven 32" & 3 BW	lf	11,000	0.30	0.33
Panels, brace	ea	14	12.00	15.00
end	ea	36	15.00	17.00
Right of way markers	ea	16	10.00	10.00
Road level operation	hr	5	20.00	30.00
Excavation, struct	cy	20	4.00	5.00
Signs & markers, permanent	ls	job	150.00	200.00
Concrete, cl A	cy	525.5	71.25	73.00
B	cy	302.1	72.25	71.00
C	cy	11.3	60.00	70.00
Steel, reinforcing	lb	102,030	0.14	0.15
structural	lb	430,220	0.23	0.23
piling, 12 BP 53	lf	900	9.00	8.00
Excavation for bridges, wet	cy	1,050	12.00	13.00
dry	cy	270	4.00	3.00
Piles, jetting holes for	lf	200	1.00	0.50
preboring holes for	lf	200	1.00	1.00
Steel pile splice welds	ea	7	15.00	20.00
sheet piling	sf	1,500	4.50	6.00
Haul roads, repair	fa	job	2,000	2,000
Force acct items, misc	fa	job	1,000	1,000

Completion schedule: 160 working days
Liquidated damages: $70/day

Steel Deck Girder Bridges Over Nebraska Highway

On a bid less than 1% below the second of five, Parsons Construction Co., Omaha, Neb. got the $660,551 contract for four bridges on the Lincoln-Omaha Road near Millard, Neb., to carry local traffic over an interstate highway. This award by the Nebraska Dept. of Roads, Lincoln, Neb., is almost 20% below the engineers' estimate.

All four will be steel girder bridges, the first a 210 ft multiple span bridge with a 28 ft roadway. Twin bridges, 341 ft long, have two 85 ft and two 69 ft spans, 42 ft roadways. The fourth is a 305 ft multiple span bridge with 30 ft roadway.

The contractor furnishes all materials. Rail and truck transportation are accessible to the site.

Concrete specifications require 5.5 sacks per cu yd for Class 47A-S, to test at 2,000 psi in 7 days, 3,000 in 28 days.

Minimum wages on this job include: Carpenters, $1.95; cement finishers, $1.85; form setter, structures, $1.75; structural ironworkers, $1.95; pile drivers, $1.50; truck drivers, $1.30-$1.75; welders, $1.85; common laborers, $1.30.

1C	Parsons Constr. Co., Omaha, Neb	$660,551
2	W. A. Lynn Const. Co., Lincoln, Neb	664,290
5	Booth & Olson, Inc., Sioux City, Iowa	727,058
EE	State of Nebraska Dept. of Roads, Lincoln	826,012

Bids: 12-19-57 Items	Unit	Quantity	Unit Prices 1C	Unit Prices 2
Excavation, bridges	cy	2,305	$3.50	$3.00
Conc, bridges, cl 47A-S, 47B & 47C-S	cy	2,556.3	51.15	54.00
Stl, reinf for bridges	lb	388,195	0.134	0.14
superstruct, sta 658+22.1	ea	1	41,141	40,000
683+66.41	ea	2	110,966	97,900
699+43.63	ea	1	64,103	60,000
Deck drain sys, sta				
658+22.1	ea	1	2,876	2,700
683+66.41	ea	2	4,061	3,000
699+43.63	ea	1	4,280	3,900
Pile test, sta 683+66.41	ea	1	500.00	500.00
Conc piling, cast in place	lf	20,572	6.00	6.50
Handrail, ornamental, tp A	lf	2,300.36	6.20	6.30
B	lf	45	6.85	5.90
Conc slope protection	sy	1,903	4.60	4.00

Commence: 4-28-58. Complete: 11-1-58
Lliquidated damages: $35/day

★ ★ ★ ★ ★

FIRST
STEEL MESH DECK
Still Making History!

The first installation of an open steel grid flooring on any bridge in the world was made in 1932, on the University Bridge, Seattle, Washington, by the Irving Subway Grating Co. The previous solid pavement on the bridge had been plagued by frequent repairs and accidents.

After 24 years this decking is still in service on the Seattle Bridge. It has had no major repairs and has never even been painted. Not a single accident has occured due to the bridge flooring.

Since then, 80% open Irving Decking has been used advantageously on hundreds of other bridges.

This remarkable record of service speaks for itself.

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Materials and Labor Prices

Monthly Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES

- Cement, Aggregate Ready-mixed Concrete, Asphalt: Last, Apr. 10; Next, May 8
- Iron and Steel Products, Pipe: Last, Apr. 17; Next, May 15
- Wood Products, Glass, Explosives, Chemicals: Last, Apr. 24; Next, May 22
- Clay Products, Lime, Plaster, Paint, Roofing: Last, Apr. 3; Next, May 29

BUILDING BOARD & LATH AND INSULATION—DELIVERED TRUCKLOAD LOTS

	GYPSUM PLASTER BOARD tapered edge per Msq ft ½"	GYPSUM PLASTER BOARD tapered edge per Msq ft ⅜"	GYPSUM BOARD LATH plain or perf per Msq ft ⅜" x 16" x 48"	GYPSUM SHEATHING tongue & groove per Msq ft ½" x 2' x 8'	FIBER BOARD SHEATHING asph impreg & coat per Msq ft ½" sq ed	FIBER BOARD SHEATHING asph impreg & coat per Msq ft 25/32" T&G	FIBER BOARD INSULATION sq edge, paint per Msq ft ½"	MINERAL WOOL INSULATION loose, per 40-lb bag a	MINERAL WOOL INSULATION 3" batts per M sf	GLASS FIBER INSULATION loose, per 40-lb bag a	GLASS FIBER INSULATION 3" batts per M sf	ALUMINUM FOIL 60# Kraft 1 side foil per roll of 250 s. f.	ALUMINUM FOIL Expansible Blanket 2 layers foil per Msq.ft
Atlanta	$70.00	$60.00	$43.50	$70.00	$70.00	$127.00	$70.00	$1.30z	$60.00	$2.00b	$75.00	.....	.....
Baltimore	51.70f	45.55f	34.25f	55.35f	65.00f	108.50f	69.00f	1.30	66.50	1.50	45.00	$4.00g	$33.50
Birmingham	73.00	60.00	47.77	75.00	65.00	136.50	81.00	1.40	70.00	1.60	75.00	3.30g	...
Boston	60.00m	50.00m	36.00m	60.00m	65.00m	120.00m	79.00hn	1.45	75.00	....	65.00	5.30	53.50
Chicago	67.00	54.00	45.00	62.00	87.00	123.00	87.00	1.85	80.00	....	63/65l	5.25g	...
Cincinnati	48.00w	42.85w	32.05w	51.16w	70.00w	125.00w	72.50w	1.30	63.00	1.30	76.50	3.12j	50.00
Cleveland	62.00	56.50	41.50	65.00	75.00	125.00	80.00	1.35/1.50	80.00	....	55.00•	20.00o	60.00
Dallas	55.00	52.50	42.50	60.00	68.50	117.50	68.50	2.00	62.25	1.45	66.15	4.35g	.....
Denver	62.00	54.50	41.00	62.00	75.90	126.00	74.90	....	71.00u	1.30e	60.00s	11.00r	21.00
Detroit	64.00	54.00	37.00	68.00	59.50	90.00	59.00	....	.....	1.95b	88.00	....	.....
Kansas City	65.00	55.00	40.00	.....	72.00	115.00	75.00	1.40	75.00	2.00	75.00	4.11d	....ty
Los Angeles	66.00	60.50	0.33x	63.00	75.00	125.00	80.00	....	83.00	1.35s	64.00	4.40g	.....
Minneapolis	75.00	65.00	0.41x	80.00	78.00	140.00	78.00	2.00	80.00	1.80	80.00	5.50	.....
Montreal	56.00	47.40	36/39	53.00	63.25	......	63.00	1.50	66.00	1.50	66.00	9.00q	56.00
New Orleans	57.00	48.00	45.00	60.00	75.00	125.00	72.50	1.75	65.00•	....	.....	.....	.....
New York	55.25	47.25	26.25	54.25	75.00	120.00	75.00	1.55b	68.50	1.55b	68.50	4.38i	52.50c
Philadelphia	50/55	48/53	34/40	49/54	68/73	105/110	55/65	....	60/70	....	70/75	5.60/6.34	40/50
Pittsburgh	70.00	65.00	40.00	.....	62.50	102.50	57.50	1.05s	55.00s	1.05s	55.00s	2.75i	38.50
St. Louis	67.00	56.50	40.00	70.00	76.50	121.50	80.00	1.35	85.00	1.65	70.00	4.50i	.....
San Francisco	57.00	48.00	0.35x	58.00	68.00	109.00	67.00	1.60	66.50	1.60	66.50	4.95	55.00
Seattle	68.30	51.65	51.05	65.00	74.50	125.00	73.50	1.60t	74.00	1.90•p	50.00•l	4.25	46.50
Toronto	55.00	47.00	38.00	64.50	75.00	......	.....	1.50	65.00	....	65.00	16.50o	46.00

•• F.o.b. warehouse. •a Semi thick. •b 30# bag. •c 12" to 24" width. •d 40# kraft paper, 5 Msf, 100/500 rolls. •e 20# sq ft bag, 4" thick. •f Full trailer loads. •g 80# kraft paper backing. •h LCL. •i 40#. •j 80#. •l 2". •m 10 ton quantities. •n Distributor's siding. •o Per Msf roll. •p 32# bag. •q 500 sf. •r Per cwt. •s 35# bag. •t 26# bag. •u Flame proof $75. •w F.o.b. city. •x Sq yd. •y Temporarily off market •z Spun rock wool, 3⅓ cu ft bags

HOURLY WAGE RATES—Base rate + fringe benefits

	Bricklayers	Carpenters	Struct. Iron Workers	Hoisting Engineers	Plasterers	Electrical Workers	Steamfitters	Common Labor Building	Common Labor Heavy Cons
Atlanta	$3.60	$2.95	$3.15+7½¢^{d}	$3.225	$3.125	$3.30+21½¢^{z}	$3.30+25¢^{d}	$1.60	$1.60
Baltimore	3.80+10½¢^{d}	3.20+7½¢^{d}	3.75+7½¢^{d}	3.80/3.95+10¢^{Q}	3.45+7½¢^{d}	3.425+7½¢^{i}	3.30+7½¢^{d}	2.05+7½¢^{d}	2.05+7½¢^{d}
Birmingham	3.65	2.85	3.25+10¢^{i}	2.65^{s}	3.05	3.425	3.32+10¢^{i}	1.65	1.75
Boston	3.65+15¢^{d}	3.25+10¢^{d}	3.70+20¢^{y}	3.77½+10¢^{I}	3.65+20¢	3.55+12¢^{S}	3.20+10¢^{d}	2.45+7¢^{d}	2.50+7¢^{d}
Chicago	3.82½+7½¢^{i}	3.45+20¢^{e}	3.80+15¢^{i}	3.40+5¢^{i}	3.70+23¢^{i}	3.65+22¢^{i}	3.55+22¢^{aa}	2.77½+7½¢^{i}	2.77½+7½¢^{i}
Cincinnati	3.75	3.45	3.50+7½¢^{d}	3.225/3.475	3.50	3.67+4¢^{N}	3.65+9½¢^{g}	2.50	2.40
Cleveland	3.715+10¢^{i}	3.74	3.64+10¢^{i}	3.74	3.74	3.765	3.64+10¢^{d}	3.00	2.915
Dallas	3.775	3.10	3.225+7½¢^{i}	3.20/3.25	3.56¼+10¢^{i}	3.25+7½¢^{i}	3.25+8½¢^{i}	1.62½	1.62½
Denver	3.75	3.20	3.175+7½¢^{d}	3.05	3.375+12½¢^{hh}	3.40^{l}	3.55+10¢^{D}	2.17	2.17
Detroit	3.53+38¢^{H}	3.25+40¢^{a}	3.60+22½¢^{P}	3.20+20¢^{k}	3.58+34¢^{ol}	3.65+34½¢^{C}	3.63+14¢^{B}	2.58+25¢^{a}	2.58+25¢^{a}
Kansas City	3.85	3.325	3.40	3.345	3.625	3.475^{O}	3.40+9¢^{W}	2.355	2.405
Los Angeles	3.80+10¢^{bb}	3.375+20¢^{d}	3.625+10½¢^{i}R	3.41+10¢^{d}	3.94+15¢^{d}	3.90^{i}	3.70+28½¢	2.68+10¢^{i}	2.68+10¢^{i}
Minneapolis	3.725	3.30	3.44	3.25	3.40+23¢^{G}	3.38+36¢^{n}	3.215+20¢^{e}	2.55	2.55
New Orleans	3.425+5¢^{i}	2.90	3.20+7½¢^{i}	3.025+7½¢^{i}	2.985+5¢^{i}	3.375+7½¢^{i}	3.25+15¢^{i}	1.65	1.65
New York	4.25+37¢^{br}	4.00+32¢^{hJ}	4.30+36¢^{p}	4.25+34¢^{ss}	4.15+52¢^{A}	3.90+43½¢^{oF}	4.20+42¢^{hL}	2.90+23.2¢^{V}	2.90+23.2¢^{V}
Philadelphia	3.75+17¢^{i}	3.535	4.05+18¢^{M}	3.20½/3.95½+10¢^{i}	3.90+15¢^{i}	4.07½+16¢^{u}	4.00+16¢^{i}	2.25	2.55
Pittsburgh	3.95+17½¢^{m}	3.525+7½¢^{i}	3.80+10¢^{d}	3.64+10¢^{d}	3.575+17½¢^{m}	4.00+28¢^{d}	3.775+17½¢^{m}	2.325+17½¢^{m}	2.30+20¢^{ff}
St. Louis	3.90+31½^{c}	3.575+10¢^{i}	3.60+7½¢^{i}	3.675^{t}	3.80+7½¢^{i}	3.83+29¢^{c}	3.80+20¢^{i}	2.625+10¢^{i}	2.625+10¢^{i}
San Francisco	3.95+52½¢^{dd}	3.175+30¢^{f}	3.62½+10¢^{i}	3.205+10¢^{i}	3.69+30¢^{w}R	3.785+26¢^{U}	3.70+46¢^{K}	2.505+10¢^{i}	2.505+10¢^{i}
Seattle	3.75+10¢^{d}	3.13+10¢^{d}	3.40+10¢^{d}	3.29+20¢^{y}	3.40+10¢^{d}	3.40+21½¢^{X}	3.62+23¢^{T}	2.70+10¢^{d}	2.70+10¢^{d}
Montreal	2.20+5¢jj	2.10+5¢jj	2.25+5¢jj	2.00+5¢jj	2.35+5¢jj	2.20+5¢jj	2.32+5¢jj	1.50+3¢jj	1.50+3¢jj
Toronto	2.76+11¢^{l}	2.50+10¢^{l}	2.55+7½¢^{l}	2.60+10¢^{l}	2.60+20¢^{ii}	2.80+11¢^{l}	2.69+17¢^{ii}	1.55+6¢^{l}	1.55+6¢^{l}

ENR Skilled Average (Bricklayers, Carpenters, Iron workers): $3.638. ENR Common Average $2.389.

* Cost of living bonus incl. in base pay. •a 6 hr day. •b 7 hr. day. •c 5% vac. stamp fund plus 10¢ WF for bricklayers; 4% VF for electricians plus 8¢ WF, 1% PF. •d H & WF. •e 10¢ H & W, 10¢ VF. •f 10¢ H & W, 10¢ PF, 10¢ VF. •h $2.85 homes & housing plus 7½¢ WF. •i WF. •j Inc. 4% VF; 1% PF pd by employer. •k 10¢ WF, 5¢ VP, 5¢ HP. •l 4% VF. •m 7½¢ WF, 10¢ PF. •n 7% V & Hol. 3% H & W, 1% PF. •o 10¢ WF, 10¢ PF. •p 3% WF, 3% PF + 10¢ in lieu of pd. hol. •q 10¢ WF, 6% V & H, 3% PF. •r 4% WF, 20¢ PF. •s 5% W & PF, 4% VF, 1% NC, 1% JI, plus 6 PH. •t Inc. 10¢ WF. •u 10¢ WF, 1% PF, ½% apprent. •v 1 drum; 2 drums, 2.80. •w 15¢ WF, 15¢ VF. •x 2% VF. •y 10¢ H & W, 10¢ PF. •z 10¢ WF, 5¢ HP. •A 15¢ WF, 15¢ PF, 20¢ BF. •B 7½¢ VP, 5¢ PF 1½¢ Ed. F. •C 9¢ H & W & Ins., 7% V & H. •D 10¢ H & WF, 5¢ indus. prom. •E 6% WF, plus travel pay per day. •F Plus $4 per day annuity contrib. •G 10¢ WF, 10¢ VF, 3¢ prom. •H 10¢ WF, 10¢ VP, 3% PF, 2% PH. •I 15¢ H & WF, 5¢ advtg. •J 5% WF, 6 PH, 3% PF. •K 25¢ W & PF, 15¢ VF, plus 6¢ misc. •L 3% WF, 3% PF, 3% VF, 1% Ed. F. •M 10½¢ WF, 7½¢ PF. •N 1% PF. •O 10¢ WF, 1% NECA. •P 10¢ H Ins., 7½¢ PF, 5¢ VF. •Q 2 drums; 1 drum $2.85/3.00 + 10¢ WF •R 10¢ H & WF, 2¢ admin. 1¢ apprent. •S 10¢ H & WF, 15¢ PF. •T H & W, VF. •U 10¢ WF, 13¢ VF, 3¢ PF. •V 4% WF, 4% PF. •W 7½¢ WF, 1½¢ Ed. F. •X 7½¢ WF, 14¢ VF. •aa 7¢ WF, 15¢ PF. •bb 8¢ WF, 2¢ advg. •dd 17½¢ WF, 20¢ PF, 10¢ PH, 5¢ Jt Bd. •ff 10¢ H & W, 5¢ PF. •gg 10¢ ins. •hh 7½¢ H & WF, 5¢ indus. prom •ii 4% WF, 4% PF, 6 PH. •jj 2%VF

	Truck drivers 1½ T	Truck drivers under 4 cy	Truck drivers over 4 cy	Tractor Operators Incl. bulldozers 34-49 hp	Tractor Operators Incl. bulldozers 70-100 hp	Tractor Operators Incl. bulldozers 100 & over	Tractor scraper 15-16 cy	Power cranes & shovels ½ cy	Power cranes & shovels ¾ cy	Motor grader oper	Air comp oper	Air tool oper
Atlanta	$1.70	$1.80	$2.05	$2.70	$2.70	$2.70	$2.70	$3.225	$3.225	$2.70	$2.475	$1.77
Baltimore	2.00+7½¢^{a}	2.00+7½¢^{a}	2.10+7½¢^{hh}	3.40/3.55 +10¢^{ab}	3.40/3.55 +10¢^{ab}	3.40/3.55 +10¢^{ab}	3.40/3.55 +10¢^{ab}	3.80/3.95 +10¢^{ab}	3.80/3.95 +10¢^{ab}	3.40/3.55 +10¢^{ab}	2.85/3.00 +10¢^{ab}	2.10+7½¢^{a}
Birmingham	1.73	1.92^{ff}	2.25^{gg}	2.79	2.79	2.79	2.93	2.93	2.93	2.89	2.52	1.90
Boston	2.395^{c}	.....^{c}	.....^{c}	3.275+10¢^{ad}	3.275+10¢^{ad}	3.275+10¢^{ad}	3.275+10¢^{ad}	3.65+10¢^{a}	3.65+10¢^{a}	3.275+10¢^{a}	3.20+10¢^{a}	2.60+7¢^{aa}
Chicago	2.36+15¢^{fa}R	......	......	3.15+5¢^{a}	3.30+5¢^{a}	3.20+5¢^{a}	3.00+5¢^{a}	3.75+5¢^{a}	3.75+5¢^{a}	3.25+5¢^{a}	3.10+5¢^{a}	......
Cincinnati	2.33^{oo}	2.43^{oo}	2.53^{oo}	3.225	3.225	3.225	3.225	3.475	3.475	3.475	3.475	3.475
Cleveland	2.625+10¢^{a}	2.625+10¢^{a}	2.625+10¢^{a}	3.49	3.49	3.49	3.49	3.74	3.74	3.49	3.365	3.365
Dallas	1.625	1.625	1.625/2.625^{l}	1.625/2.625^{l}	1.625/2.625^{l}	1.625/2.625^{l}	1.625/2.625^{l}	1.625/2.625^{l}	1.625/2.625^{l}	1.625/2.625^{l}	1.625/2.65^{l}	1.775/2.00^{l}
Denver	2.30	2.40	2.55	2.30	2.90	2.90	2.90	3.05	3.05	2.90	2.90	2.45
Detroit	2.61	2.61	2.61	3.50+10¢^{a}	3.50+10¢^{a}	3.50+10¢^{a}	3.50+10¢^{a}	3.50+10¢^{a}	3.50+10¢^{a}	3.50+10¢^{a}	3.225+10¢^{a}	2.71+25¢^{mm}
Kansas City	2.33^{a}	2.33^{o}	2.405^{p}	2.65	3.10^{q}	3.10^{q}	3.10^{r}	3.345	3.345	3.10	3.345^{t}	2.45
Los Angeles	2.83+10¢^{a}	2.83+10¢^{a}	3.03+10¢^{a}	3.71+10¢^{a}	3.71+10¢^{a}	3.71+10¢^{a}	3.81+10¢^{a}	3.81+10¢^{a}	3.81+10¢^{a}	3.81+10¢^{a}	2.93+10¢^{a}	2.89+10¢^{a}]
Minneapolis	2.55	2.55^{g}	2.70^{i}	2.93	3.15^{q}	......	3.15	3.37^{y}	3.63^{z}	2.93	2.82	2,68
New Orleans	1.80	2.05	2.05	2.375+8¢^{a}	3.025+7½¢^{a}	3.025+7½¢^{a}	3.025+7½¢^{a}	3.025+7½¢^{a}	3.025+7½¢^{a}	3.025+7½¢^{a}	2.375+7½¢^{a}	1.75
New York	2.21+22½^{cc}	2.75+14¢^{bb}	2.75+14¢^{bb}	3.625+29¢^{h}	3.625+29¢^{h}	3.625+29¢^{h}	3.75+30¢^{h}	4.50+36¢^{h}	4.50+36¢^{h}	3.75+30¢^{h}	3.75+30¢^{ht}	3.35+27¢^{ss}
Philadelphia	——2.215/2.35+12½¢^{w}——			——3.20½/3.95½+10¢^{a}——			3.20½/3.95½ +10¢^{a}	—3.20½/3.95½+10¢^{a}——		3.20½/3.95½ +10¢^{a}	3.20+10¢^{a}	2.25+10¢^{a}
Pittsburgh	2.37+20¢^{m}	2.51+20¢^{m}	2.61+20¢^{m}	3.44+10¢^{a}	3.44+10¢^{a}	3.44+10¢^{a}	3.44+10¢^{a}	3.64+10¢^{a}	3.64+10¢^{a}	3.64+10¢^{a}	3.15+10¢^{u}	2.30+20¢^{m}
St. Louis	2.65+7½¢^{ae}	2.70+7½¢^{a}	2.70+7½¢^{a}	3.675^{kk}	3.675^{kk}	3.675^{kk}	3.675^{kk}	3.675^{kk}	3.675^{kk}	3.675^{kk}	3.125^{kk}	3.125^{kk}
San Francisco	2.55+10¢^{a}	2.55+10¢^{a}	2.69+10¢^{a}	3.32+10¢^{a}	3.32+10¢^{a}	3.32+10¢^{a}	3.32+10¢^{a}	3.65+10¢^{a}	3.65+10¢^{a}	3.48+10¢^{a}	2.93+10¢^{a}	2.755+10¢^{a}
Seattle	2.87+17½¢^{az}	2.87+17½¢^{ddz}	3.07+17½¢^{zee}	3.26+20¢^{tt}	3.26+20¢^{tt}	3.26+20¢^{tt}	3.26+20¢^{tt}	3.63+20¢^{tt}	3.63+20¢^{tt}	3.35+20¢^{tt}	2.99+20¢^{tt}	2.90+10¢^{a}
Montreal	1.50+3¢^{ll}	1.50+3¢^{ll}	1.50+3¢^{ll}	1.70+4¢^{ll}	1.93+4¢^{ll}	1.93+4¢^{ll}	1.93+4¢^{ll}	2.19+5¢^{ll}	2.19+5¢^{ll}	1.93+4¢^{ll}	1.80+4¢^{ll}	1.80+4¢^{ll}
Toronto	1.60+6¢^{ii}	1.60+6¢^{ii}	1.60+6¢^{ii}	2.00+8¢^{ii}	2.10+8¢^{ii}	2.10+8¢^{ii}	2.10+8¢^{ii}	2.60+10¢^{ii}	2.60+10¢^{ii}	2.10+8¢ii	2.15+9¢^{ii}	2.15+9¢^{ii}

•a H & WF. •b lower rates, straight time; other broken. •c 2-axle; 10 wh. 3 axle $2.45; Euclid $2.65. •d intermediate. •e bldg contr.; highway $2.45+7¢ WF. •f less than 2-T. •g up 6 cy. •h 4% WF, 4% PF. •i 6-8 cy. •j plus $2 pd by employer for hosp. death benefits to family. •k bldg constr; steel contr $3.475. •l higher rates are union, other taken from min. wage approved by County Comm. Court. •m 10¢ H & W, 5¢ PF. •n flatbed. •o under 10 cy. •p over 10 cy. •q over 50 hp. •r blade grader. •s WF. •t single. •u incl. 10¢ H & W. •w 7½¢ H & W. 5¢ PF. •x 7½¢ WF, 10¢ PF. •y to 3½ cy. •z 3½ cy & over. •aa plus W & PF •bb 3% WF, 2% PF; plus 11 PH. •cc 11¢ WF, 11½¢ PF, 11 PH. •dd up to 5 cy. •ee 5 cy & over. •ff 1½ to 3 T. •gg up to 5 T; 5 T & over, 2.25. •hh 5¢ H & WF, 2½¢ PF. •ii 4% VF •kk Incl. 10¢ WF. •ll Incl. 2% VF. •mm 10¢ H & WF, 10¢ ins, 5¢ VP. •oo Plus $2.25 wk. WF. •ss 5% WF, plus 6 PH. •tt 10¢ H & WF, 10¢ PF.

MEXICO CITY PRICES

Pesos, F.o.b. City		Mar. '58	Apr. '58
Common Wages—Building (8 hr. day) (Peons)	av. per hr.	1.57	1.57
Common Wages—Heavy Const. (8 hr. day) (Peons)	av. per hr.	1.98	2 00
Skilled Labor Wages			
Carpenters (8 hr. day) 1 cl.	av. per hr.	3.25	3 25
Bricklayers (8 hr. day) 1 cl.	av. per hr.	2 87	2 87
Struct. Iron Workers (8 hr. day)..... Remachadores.	av. per hr.	4.38R	4 38R

Struct. Steel, Shapes		Mar. '58	Apr. '58
3"-15" x 12 meters	per metric ton	2300.00#	2300.00#
# fob Monterrey			
Reinf. Steel, Corrugated Rods			
⅜" x 11 meters	per ton	2100.00R	2100.00
[illegible]" x 11 meters	per ton	2100.00	2100.00
[illegible]" x 11 meters	per ton	2000.00	2000.00
[illegible]" x 11 meters	per ton	2000.00	2000.00
[illegible]" x 11 meters	per ton	2000.00	2000.00
1" x 11 meters	per ton	2000.00	2000.00

Gravel truck load at 3½ cu. meters		Mar. '58	Apr. '58
Blue Gravel	per tr. load	75.00	75.00
Rose Gravel	per tr. load	65.00	65.00
Cement, Std. Port. (Tolteca)	per tan	240.00	240.00
Lumber			
1" Pine	per M ft.	1700.00	1700.00
1½" Pine	per M ft.	1900.00	1900.00

•R revised

Materials and Labor Prices

Monthly Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES

- Cement, Aggregate Ready-mixed Concrete, Asphalt: Last, Apr. 10; Next, May 8
- Iron and Steel Products, pipe: Last, Apr. 17; Next, May 15
- Wage Rates, Building Board, Lath, Insulation: Last, Apr. 3; Next, May 29
- Wood Products, Glass, Explosives, Chemicals: Last, Apr. 24; Next, May 22

STRUCTURAL CLAY BUILDING TILE, BRICK AND LIME—DELIVERED

	STRUCTURAL CLAY TILE PARTITION — SCORED Per M. lots of 2,000 pieces or over, 3x12x12 in.	4x12x12 in.	8x12x12 in.	STRUCTURAL CLAY TILE — LOAD BEARING — SCORED Per M. lots of 2,000 pieces or over, 8x12x12 in.	10x12x12 in.	12x12x12 in.	BRICK Per M. in quantity Common backing	Straight hard	LIME Per ton, in paper, Carload lot, Hydrated finishing	Common hydrated	Pulverized or lump
Atlanta	$149.90p	$149.90p	$299.80p	$334.55p	......		$30.50p	$32.70p	$23.50	$24.50	$.....
Baltimore	217.00	231.00	434.00	491.00	602.00	690.00	36.00k	41.00k	35.60	23.20	.....
Birmingham	135.00p	152.00p	......	303.00p	376.00p	465.00p	27.00ff	38.00y	35.02	22.30	26.33g
Boston	232.00†	248.00†	463.25†	556.00†	......	......	41.50p	46.50p	39.20†	31.20†	.....
Chicago	135.00	145.00	280.00	......	......	......	30.00	32.00	38.00	35.20o	.....
Cincinnati	205.00j	225.00j	296.00jdd	213.00j	288.00j	314.00j	48.75i	47.00i	30.04j	26.04i	30.04j
Cleveland	209.00	223.00	......	475.00	......	......	38.00	46.00gg	31.00	25.00	.....
Dallas	152.00	152.00	300.00	364.50	446.25	552.50	26.75	48.00	41.80	24.58	28.50
Denver	......	......	......	......	......	......	21.50	49.50	46.00p	42.00p	46.00p
Detroit	273.00	298.00	545.00	......	794.00	906.00	47.50p	48.00p	38.00	34.00	.....
Kansas City	158.00	158.00	312.00	312.00	400.00	500.00	33.00	33.00	36.26	34.26	29.76
Los Angeles	r	r	r	r	r	r	32.50§	.....	38.00	38.00	39.00
Minneapolis	192.00p	215.00p	437.00p	215.00pw	......	......	45.60vp	54.00y	47.00bbe	37.00bbe	49.00bbde
Montreal	170.00qu	178.00qu	325.00squ	270.00q	400.00q	......	48.25b	56.30b	39.00	22.00	13.25
New Orleans	186.00	186.00	380.00	380.00	......	......	40.00	55.00	44.00	32.00	32.00P
New York	175.30h	187.00h	280.40ch	283.00hn	......	......	44.00	.....	38.00	35.00	....
Philadelphia	169.00	180.20	337.90	405.00	......	......	30/34	38/42	27.60	25.60	3.17m
Pittsburgh	147.50t	157.75t	295.00t	335.00t	435.00t	500.00t	39.00t	46.00t	36.00t	31.00t	....
St. Louis	178.50p	185.00p	391.00p	401.00p	459.00	621.50	43.00l	41.50	0.95aa	.80aa	1.35z
San Francisco	156.85*	177.10*	235.30dd*	......	......	......	43.00*	43.00*	28.90	28.90	31.00
Seattle	235.00p	270.00p	490.00p	265.00pw	......	......	48.00	62.00	52.00bb	38.00bb	4.50mbb
Toronto	146.00	157.00	289.00	234.00f	395.00	......	35.00	63.00	36.00	33.50	31.50

•§ F.o.b. Yard. •* F.o.b. plant Stockton. •† F.o.b. yard Roxbury. •a Smooth. •b $4.50 del. •c 8 x 12 x 12 in.-3 cell. •d Pulverized hot. •e 5%, 10th following month. •f 8 x 8 x 12. •g Lumps, $26.72. •h F.o.b. trucks, job site N.Y.C •i 60 lb sacks. •j Truck load or over. •k $1.00 discount. •l Red face. •m Per bbl., 180 lb. processed. •n 7¾ x 7¾ x 12. •o Mason's double hydrated pressure. •p Truck lots. •q Provincial and Municipal tax extra. •r Not used: earthquake danger. •s 8 x 16 x 12. •t 2% cash. •u Incl. Federal tax. •v Sand lime. •w 5 x 8 x 12. •y Chi common. •z Pebble: 80 lb sack. •aa 50 lb sack. •bb LCL. •dd 8 x 12 x 12. •ff 80% common. •gg Smooth. $51.50 Rough.

PAINT, ROOFING—F.O.B. CARLOAD LOTS

	RED LEAD Per 100 lb. in 600-lb. (Approx.) bbl. Dry a	WHITE LEAD Per 100 lb. in 100 lb. cases In oil w	READY-MIXED PAINT Per gal., drums Graphite b	Aluminum c	Ferric Oxide d	ROOFING SUPPLIES; Carload lots f.o.b. factory Rolls, slate surfaced, 85-90 lb. per sq.	Asphalt felt, per 100 lb.	Tar felt, per 100 lb.	Asphalt coating per gal.	Tar pitch 380 lb. bbl. per ton
Atlanta	$16.50	$30.125	$3.59	$3.86	$3.31	$3.39	$2.20	$2.62	$0.67	$57.75
Baltimore	16.25	29.75	3.00	4.40	3.50	2.78	4.25	4.25	.48	54.25
Birmingham	16.50	30.125	3.96	3.40	....	3.09	2.29ii	2.29ii	.82ff	45.00ee
Boston	16.25	29.75	....	....	....	3.30gq	2.23z	2.23z	.50g	58.00g
Chicago	16.25	29.75	....	....	....	3.65‡u	2.74‡o	2.98‡o	46.00‡bbv	57.70‡
Cincinnati	16.25	29.75	....	....	....	3.13	2.70	2.73	.428y	55.96
Cleveland	16.25	29.75	2.55pgg	2.59ggR	2.92zg	2.77z	2.02z	2.85	.501y	49.00gg
Dallas	16.50	30.50	....	3.20B	....	2.95u	2.95o	2.95z	.464	65.00hh
Denver	16.75	30.25	3.98	5.20	3.70	2.49	1.90z	2.45o	.48ff	50.00
Detroit	16.25	29.75	2.70	3.95	2.70	2.83	1.91f	2.49f	.43‡ff	51.00
Kansas City	16.25	30.50	3.99	3.43	3.01	2.72ii	1.82z	1.82z	.54z	......
Los Angeles	16.25	30.00	3.30n	4.50n	4.20n	3.20n	2.15nii	l	.70wy	l
Minneapolis	16.25	29.88/29.75	....	....	....	2.78	2.27hi	2.27hi	.442i	50.00r
Montreal	......	......	5.02Dfft	5.94xfft	4.65kfft	5.40	4.65f	4.65f	1.60	....
New Orleans	......	......	....	....	....	2.34	1.63	2.85	0.680	....
New York	15.25C	29.75	....	....	....	3.19	2.45o	2.45o	.425s	49.00*
Philadelphia	16.25	29.75	3.60	3.40/3.65	3.50/4.60	3.00/3.30	2.54o	2.54o	.37/.45	48/54
Pittsburgh	16.25	29.75	2.20#E	2.25#F	2.25#G	3.37s	2.59s	......	.45	......
St. Louis	16.25	29.75	....	....	....	3.40iis	2.54hh	2.85hh	.44y	62.00
San Francisco	16.25	30.00	3.20	4.30	3.50	2.85	1.97aa	3.10	.475jj	54.00
Seattle	16.25	30.25	3.47	4.19cc	....	3.82qcc	3.30hcc	....	.50cc	51.40ee
Toronto	......	......	5.00	5.75	5.50	5.40	4.15e	3.30o	1.70j	62.00A

•† Delivered. • Note: Red lead in oil 50% higher than white lead in oil. •* Aver. wt. approx. 425 to 550 lb drums. •a Red lead prices change frequently due to pig lead price changes. •b U.S. War Dept. Spec. 3-49A. •c ASTM Spec. D266-31. •d 80% minimum ferric oxide. •e 15 lbs. •f Per 432 sq ft. •g F.o.b. yard, Roxbury. •h Per roll, 65 lb. •i Net carload prices, Minneapolis and vicinity. •j 45 gal containers. •k Over 80% ferric oxide. •l Not used. •n F.o.b. city. •o Per 60 lb roll. •p 6-drum, 50 gal each. •q Per 90-lb roll. •r F.o.b. factory, Chicago. •s Truckload. •t Incl. Federal tax. •u Per 90-lb square. •v Per ton. •w Price to contractors $1.25 less. •x Ready-mixed. •y 55-gal container. •z Drums. •aa 15 lb, sq ft. roll. •bb Roofers coating and cement. •cc LCL, truck delivery. •ee Asphalt pitch in 100 lb package. •ff 5-gal drums. •gg F.o.b. factory. •hh Incl. freight. •ii Per roll. •jj Asbestos roof coating. •A 400 lb barrels. •B ASTM Spec. D962-49. •C 95%. •D Std. black. •# Milt. spec.: E TTP27; F TTV81; G TTP31. •H Not quoted after Oct. 1957 •R revised.

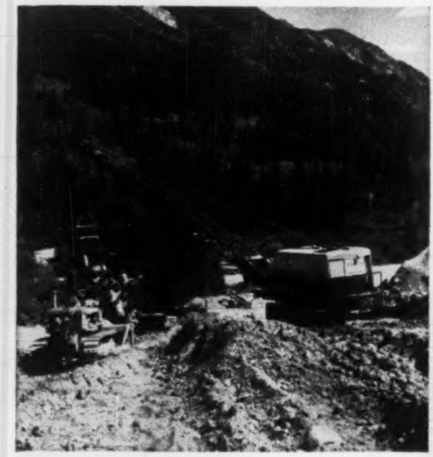
PLASTER, VERMICULITE AND METAL BUILDING SHEETS & TUBING

	PLASTER‡ Neat per ton	Gauging per ton	VERMICULITE‡ Home Insulation pellets (per bag of 4 cu ft)	Plaster aggregate (per bag of 4 cu ft)	Concrete Aggregate Untreated (per bag of 4 cu ft)	PERLITE‡ Plaster Aggregate (per bag of 4 cu ft)	Concrete Aggregate Untreated (per bag of 4 cu ft)	ALUMINUM SHEETh† Flat .102" th 38"x96" & 48"x144" per lbjt	Corr roof .032" th 35"x12' per shu	STAINLESS STEEL† SHEET-TYPE 302g 20 ga 48"x96–120" per cwthh	28 ga 36"x120" per cwtmm	COPPER WATER* TUBING-TYPE L 2000 ft lots per ft ⅜"b	½"e
Atlanta	$31.00	$36.00	$1.55s	$1.65s	$1.80al	$1.65	$1.65	$0.422n	$8.97n	$61.44n	$67.50	$16.74f	$23.41f
Baltimore	23.80	34.60	0.95	1.15	1.15	1.15	1.60	0.431	0.489r	56.25	64.25	0.1674	0.2341
Birmingham	33.00	39.00	1.55	1.55	1.80l	1.55	1.55l	0.446	10.48	67.34	76.09	0.1608	0.2244
Boston	22.00	30.00	1.40	1.40	1.45	1.45	1.50	0.466	30.10p	65.42dd	71.92ddff	0.1562	0.2176
Chicago	26.80	26.80	1.55	1.60	1.60l	1.60	1.60	0.506x	10.376a	65.15aee	73.90aee	0.1562	0.2176
Cincinnati	28.00*	28.00*	1.75	1.75	1.75	1.85	1.90	0.434	9.56	65.28	74.03ff	0.1608	0.2244
Cleveland	28.00	44.70	1.13k	1.16ii	1.24l	1.45	1.45	0.486aa	8.28	65.33oo	74.08oo	15.62f	21.76fR
Dallas	30.65	32.65	1.05	1.21	1.32	1.21	1.32	0.474	0.510r	67.00	80.75	0.1520	0.2170
Denver	25.00	25.00	1.50	1.40	1.50	1.40	1.55	0.446	10.09	66.30gg	75.05gg	0.1825	25.46
Detroit	26.00	25.00	1.28	1.32	1.41	1.43	1.51k	0.456a	10.376a	65.15a	73.90a	14.02f	19.00f
Kansas City	30.00	35.00	1.14	1.18	1.26l	1.18	....	0.444	11.40	67.50	76.25	15.62f	21.76f
Los Angeles	27.00	28.00	1.25k	1.20k	1.25	1.00	1.10	0.486	10.543d	67.10	75.85	0.1562	0.2176
Minneapolis	35.00	35.00	1.55	1.70	1.80	1.40	1.40	0.503	15.15w	65.71	72.21ff	0.15.62f	0.21.76f
Montreal	27.60h	35.60h	1.20	1.40	1.50	1.15s	1.15s	0.437	9.92	66.50	......	0.1827	0.2160
New Orleans	32.00	45.00	1.25	1.25	1.25	1.25	1.25	0.424	8.593	71.50	72.75	0.1608	0.2244
New York	24.20	30.20	1.35	1.30	1.50	1.40	1.40	0.506a	10.14ad	68.58	77.33	16.08f	22.44f
Philadelphia	23/25	32.00	1.35	1.35	1.40l	1.05	1.05	0.44aw	9.46a	66/68a	75/77a	20.00f	28.75f
Pittsburgh	30.00nn	33.00nn	1.60nn	1.50nn	1.35	1.73	1.73	0.456	9.83	64.00	76.25ppR	0.1378	0.1920
St. Louis	29.00	40.00	1.35	1.60jj	1.50	1.60	1.60	0.456	10.37	68.11	74.61v	15.62fm	21.76fm
San Francisco	27.85	32.00	1.20	1.20	1.30	1.20o	1.30o	0.506	9.13	67.10	75.85	0.1562	2176
Seattle	42.40	45.60	1.55	1.25k	1.85l	1.50k	....	0.506	10.10	67.08	88.08	0.1562	0.2176
Toronto	28.00	45.50	1.20	1.30	1.45l	....	1.55	0.4095	24.00ae	73.74	86.52	0.2525	0.2983p

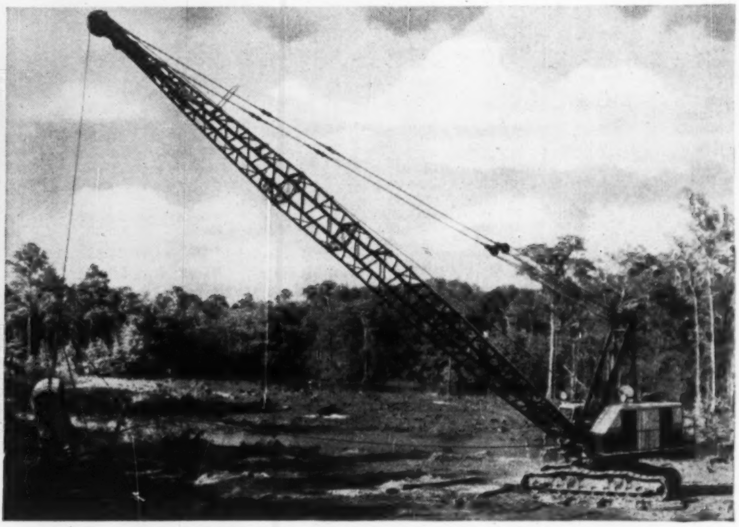
‡trucklots, delivered †fob warehouse *fob city •a delivered •b ½" O.D. •c ⅝" O.D. •d 0.100"th •e 34" x 60" sheet •f per 100 ft •g 5 tons & up: cold roll, anneal & pickled; 2B finish •h incl. Federal tax •i add 25¢ for pint of additive •j 1100 & 3003 alloy, mill finish •k bag of 3 cu ft •l treated with air entraining agent •m 2-10M ft •n fob mill, fr allow •o 250 sacks or more •p 100 sq ft •r per lb. •s 30 lb bag •t 36" x 96;-10.81 lb/sh; 48" x 144": 21.7 lb/sh •u 19.31 lb/sh •v fob plant •w 48" x 144" •x 100th •y 27 gauge •aa 16M lb & up •dd add $1.00 cwt boxing. •ee 4 tons & up •ff 26 ga •gg add $2/cwt boxing; $0.75/cwt on skids •hh Theoretical wt for 48" x 96"; 60.4-lb, per sh. •ii 300-bag lots •jj 100-lb bag •mm Theoretical wt: 19.7-lb per sh. •nn 2% cash •oo skid packed •pp type 304 •R revised.

From Colorado to the Carolinas . . .

Owners get more time for OUTPUT with Bucyrus-Eries . . . You Can, Too



On a highway resurfacing job near Silver Plume, Colorado, a 1½-cu. yd. Bucyrus-Erie 38-B dragline feeds a portable crusher plant. Owner: Northwestern Engineering Co., Denver.



In South Carolina, Atlantic Dredging Company of Manning has no trouble keeping work on schedule with this Bucyrus-Erie 71-B dragline. The job: relocating Waccamay River near Conway to permit construction of a state highway.

For years Bucyrus-Erie draglines have provided top performance on highway, road, and street construction jobs throughout the country. With a Bucyrus-Erie dragline, you get more working time each hour of every shift — more daily output — because:

It's built tough. Parts are simple, large, few in number — there is little that can go wrong. It stays on the job. Machinery is arranged simply, compactly so that maintenance can be handled quickly with little downtime. It's easy to keep a Bucyrus-Erie going at top capacity. Exceptional synchronization of speeds and power assures smooth, well balanced work cycles . . . fast, responsive control.

Why not join the growing list of owners who have profited from Bucyrus-Erie draglines. Your nearby Bucyrus-Erie distributor will gladly help you select the right size of machine — ranging from ⅜ to 4 cubic yards — for your requirements. 469E58

BUCYRUS-ERIE COMPANY · SOUTH MILWAUKEE, WIS.

DESIGNED FOR YOU! *You can count on bonus output ability from your dragline when the boom carries a Bucyrus-Erie New-Design bucket. It's engineered for fast, full loading, clean dumping. Bucyrus-Erie buckets are made of BEC-OLOY — a steel alloy developed by Bucyrus-Erie especially for dragline buckets. This 1½-cu. yd. bucket is caught in action on a road job in Toledo, Ohio — on a 30-B owned by Schoen Asphalt Paving Co.*

A Familiar Sign . . . **BUCYRUS ERIE** ***. . at Scenes of Progress***

Construction Reports

Bids Asked—Low Bidders—Contracts Awarded—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. WETZEL, M. E. SCIORRA, D. TARTAGLIA, Reports
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

BUILDINGS—BA

▲ **Mass., Orleans**—SCHOOL—BA 5/16—Orleans-Eastham & Wellfleet School Dist., Supt. Schools, regional Junior-Senior High School adjacent to present high school. $1,500,000. Plans deposit $50. Walter M. Gaffney Assoc., West Main St., Hyannis, archts. CD 12/19.

▲ **Conn., Naugatuck**—SCHOOL—BA 6/19—Town, Town Hall, 2 story, 128,000 sq. ft., steel frame, cinder block, brick facing high school, Rubber Ave., $2,000,000. Sherwood, Mills & Smith, 65 Broad St., Stamford, archts. Werner, Jensen & Korst, 641 Summer St., Stamford engrs. CD 8/23/57.

HEAVY CONSTRUCTION—LB & CA

▲† **Perini Corp.**, 78 Montwait St., Framingham, Mass. LB **$3,143,450**, est. $3,889,425, North Springfield Dam and appurtenant structures, Black River, Stage II, outlet works, intake tower, rein.-con. tunnel and utilities, ENG-19-16-58-36, North Springfield, VERMONT. U. S. Eng., 150 Causeway St., Boston, Mass. Bids Apr. 17. CD 3/4.

▲† **The Arundel Corp.**, 334 Furman St., Brooklyn, N. Y. LB **$3,184,200**, imprvt. dredging Fore River, CIVENG-19-016-57-63, Weymouth, MASSACHUSETTS. U. S. Eng., 150 Causeway St., Boston 14, Mass. Bids Apr. 16. CD 4/4.

▲ **RHODE ISLAND**—State R. I. & Prov. Plants, Div. Purchase, State House, Providence,
Campanella & Cardi Constr. Co., 780 Jefferson Blvd., Warwick, R. I. CA **$1,473,572.** Bid 785 RI Contr. 5805 FA Proj. No. 1-01 (18) Int. Hy. Quaker Lane West Warwick, East Greenwich and West Greenwich, paving 7 mi. relocation Rte. 3, Kent Co. Bids Apr. 2. CD 4/7, under LB.

BUILDINGS—LB & CA

▲ **Columbia Contr. Co.**, 11 Hanover St., Malden, Mass., CA **$1,489,510**, est. $1,800,000, U-57-1 (second section) SCIENCE CENTER, University of Massachusetts, AMHERST, MASS. Commonwealth of Mass., University of Mass., c/o Div. Bldg. Constr., 38 Chauncy St., Boston, Mass. Bids Mar. 28. CD 4/1, under LB.

▲ **Sewell & Smith Constr. Co.**, Irving Sq., Framingham, Mass., CA **$1,100,000**, HIGH SCHOOL, TEWKSBURY, MASS. Town, Supt. Schools, Tewksbury, Mass. Bids Apr. 4. CD 4/10, under LB.

▲ **W. J. Megin, Inc.**, 51 Elm St., Naugatuck, Conn., CA Approx. **$2,000,000**, constr. 200,000 sq. ft. WAREHOUSE, NEW MILFORD, CONN. Kimberly-Clark Paper Co., 128 N. Commercial St., Neenah, Wis. Awarded Apr. 15.

▲ **H. U. Bail & Sons, Inc.**, 9 Franklin St., Southbridge, Mass., CA **$1,425,900**, Proj. Conn. 24-1, 124 units, 29 bldgs., Hampshire Heights HOUSING, PUTNAM, CONN. Putnam Housing Auth., City Hall, Putnam, Conn. Bids Mar. 27. CD 4/2, under LB.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

▲ **N. Y., Idlewild**—TERMINAL BLDG.—BA 5/12—Pan-American World Airways, 135 E. 42 St., New York, Zone 17, (selected list bidders), terminal bldg. at New York International Airport. $8,000,000. Turano & Gardner & Ives, 65 E. 55 St., New York 22, N. Y., archts. Tippetts, Abbett, McCarthy, Stratton, 62 W 47 St., New York, Zone 19, engrs. CD 4/18.

BUILDINGS—BA

▲ **N. Y., New York**—OFFICE—BA 5/21—Dpt. P. Wks., Municipal Bldg., New York, Zone 7, general constr. office of Chief Medical Examiner, incl. plumbing, heating and ventilating, and electrical work, to be located on northeast corner of 1st Ave. and E. 30th St., Manhattan Boro. $2,600,000. Plans deposit $100. CD 9/11.

▲ **Pa., Indiana** — DORMITORIES — BA 5/21 — General State Auth., 18 and Herr Sts., Harrisburg, general, heating, plumbing and electrical constr. 3 story constr. with a partial bsmnt. and single story annex dormitories for men and women near military hall bounded roughly by Grant St. and Pratt Ave. at Indiana State Teacher's College. Joseph Hoover, 333 Blvd. of the Allies, Pittsburgh, archt. CD 1/2/57.

BUILDINGS—SLC

▲ **Pa., Pittsburgh**—CHURCH—Westminster Presbyterian Church, 2040 Washington Rd., Castle Shannon, Pittsburgh, soon lets contract 2 story, brick, block church addn., Upper St. Clair Twp. $1,000,000. Wm. C. Young, 903 Standard Life Bldg., archt.

HEAVY CONSTRUCTION—LB & CA

▲ **D. W. Winkleman Co., Inc.**, 205 Harrison, Syracuse, N. Y., LB **$5,266,789**, Contr. 9, general constr. flow units for Hiawatha Treatment Plant, SYRACUSE, N. Y. Metropolitan Syracuse Treatment Plant Dist., Onondaga Co., County Office Bldg., Rm. 102, 600 South State St., Syracuse, Zone 2, N. Y. Bids Apr. 18. CD 3/3;
Morris Machine Works, Baldwinsville, N. Y., LB **$155,960**, Contr. 10 (Syracuse, N. Y.);
Kenneth A. Taylor, New Court Ave., Syracuse, N. Y., LB **$108,751**, Contr. 11 (Syracuse, N. Y.);
General Electric Co., 3532 James, Syracuse, N. Y., LB **$129,500** (Syracuse, N. Y.).

▲ **Pa. Dpt. Forests & Waters**, Education Bldg., Harrisburg, Pa., rejected bids Apr. 15, Contr. I, modernization Erie Harbor, incl. dredging slip, bulkhead constr. rough fill and riprap slope protection, Erie Co., PENNSYLVANIA. LB **$1,328,550.** CD 4/11.

▲ **PENNSYLVANIA**—Pa. Hys. Dpt., 506 North Office Bldg., Harrisburg,
Obrien & Redmond, Box 411, Devon, Pa. CA **$1,014,648**, plate girder bridge and 4,229 ft. c. conc. variable in width as 2 separated hys. T.R. 88 Monaca Freedom and E. Rochester Boros, Beaver Co. Bids Mar. 28. CD 4/2, under LB.

▲ **PENNSYLVANIA** — Pa. Hy. & Bridge Auth., 506 North Office Bldg., Harrisburg,
John F. Casey Co., Box 1888, Pittsburgh 30, Pa., CA **$1,275,583**, 7,908 ft. c. conc. road various in width retaining walls and ramps and curbs as section Penn-Lincoln Parkway and Blvd. of Allies. (Proj. 810-1) FAI Interstate, Pittsburgh, Allegheny Co. Bids Mar. 27. CD 4/1, under LB.

▲ **Bel Aire Development Co.**, Newman Spring Rd., Lakewood, N. J., Own Forces, **$4,500,000**, 400 HOUSES, Auburn Road and Rte. 9, Berkeley Twp., near Toms River, BAYVILLE, N. J.

▲ **Steiner & Massari, Inc.**, 786 Grange Road, Teaneck, N. J., Owner Builds, **$1,000,000**, 242 unit garden APARTMENT, McLean Blvd., PATERSON, N. J.

▲ **Leader Development Co.**, c/o Sanford Gallanter, 17 Academy St., Newark, N. J. Own Forces. **$6,000,000**, 600 HOUSES, Rte. 18, WASHINGTON, N. J.

▲ **J. C. Orr & Son**, 438 7th Ave., Altoona, Pa. LB **$1,364,374** (6 bidders) general constr. SECONDARY SCHOOL BLDG. for Huntington Area Jt. School Bd., HUNTINGDON, PA. Pa. P. School Bldg. Auth., 101 S. 25th St., Harrisburg, Pa. Bids Apr. 17. CD 3/14.

HEAVY CONSTRUCTION—LB & CA

▲ **FLORIDA**—State Rd. Dpt., Dist. Office, Lake City, Fla.—**W. L. Cobbs Constr. Co.**, Box 977, Tampa, Fla., CA **$1,068,507**, est. $1,250,000, limerock base, Type 1 b. conc. surf. course and binder course, 4.069 mi. between Dunlawton Blvd. at Port Orange and the south City limits of Daytona Beach, F. A. Proj. No. S½ 482 (1) Job No. 7953-250 SR A-1A, Volusia Co.;
Fla.—**R. H. Wright & Son, Inc.**, Box 781, Fort Lauderdale, Fla., CA **$1,330,808**, est. $950,000, Proj. Job. No. Fed. Aid. S-0482 (1) Job. No. 7953-250-SR A-LA between Dunlawton Blvd. at Port Orange and the South City Limits Daytona Beach, work consists of medium excav. 8½ in. limerock base, Type 1 asph. concr. surf. course and binder course; drainage structures 4.069 mi. Volusia Co. Bids Feb. 18, awarded Apr. 17. CD 2/24, under LB.

▲† **J. C. Harper Constr. Co.**, 307 Harwood Ave., Orlando, Fla., CA **$1,328,257**, est. $1,810,860, operations program, Pinecastle Air Force Base (FY 56) ENG-08-123-58-29, Pinecastle, ORLANDO, FLA. U. S. Eng., Box 4970, Jacksonville, Fla. Bids Mar. 25. CD 4/2, under LB.

▲† **M. B. Kahn Constr. Co.**, 1113 Blossom St., Columbia, S. C., LB Alt. No. 1, **$1,632,510**, Alt. 3 **$1,675,550** dining hall, airmens dormitories and electr. rehabilitation to existing dormitories, MacDill Air Force Base, ENG-08-123-58-33, TAMPA, FLA. U. S. Eng.; P. O. Box 4970, Jacksonville, Fla. Bids Apr. 15. CD 3/10.

▲† **Boyd & Goforth, Inc.**, Box 10436, Charlotte, N. C., Base Bid **$1,580,918**, LB Alt. No. 2, **$1,634,118**, dining hall, airmen's dormitories and electr. rehabilitation of existing dormitories, MacDill Air Force Base, ENG-08-123-58-33, TAMPA, FLA. Bids Apr. 15. CD 3/10.

▲ **ALABAMA**—State Hy. Dpt., Montgomery, Bids opened 4/11,
Blount Bros. Constr. Co., 79 Commerce St., Montgomery, Ala. LB **$1,133,580** (3 bidders) railroad overpasses and Tenn River Bridge 0.479 mi. at Decatur. F. A. Proj. U-UG-239 (5) Limestone and Morgan Counties. CD 4/1.

▲ **ALABAMA**—State Hy. Dpt., Montgomery 4, Bids opened 4/11,
Ala.—**A. E. Burgess Co., Inc.**, 3700 10 Ave., N. Birmingham, Ala. LB **$1,096,837** grading, drainage from near Blount Co. line N. 6.715 mi. Int. Rte. 65, Cullman Co.; LB **$1,419,701** grading, drainage 6.202 mi. from Mariot Creek N. to Ala. 69 Int. Rte. 65, Cullman Co.;
Ala.—**J. & H Excavating Co.**, 1400 10th Ave., Tuscaloosa, Ala. LB **$733,998** grading, drainage, bridges and A. C. L. R. R. overpass on U. S. 231 from Midland City to Ozark 10.4 mi. (roadway) Dale Co.; LB **$121,557** grading, drainage, bit. treatments 6.67 mi. Prairieville-Laneville Rd., Hale Co.; LB **$147,254** grading, drainage, bit. treatments from U. S. 82 via Mt. Olive Church to Ala. 171 from Mt. Olive Church W. to Ala. State line 7.7 mi. Tuscaloosa Co.;
Ala.—**M. A. Evans Constr. Co.**, Wetumpka, Ala. LB **$512,742** grading, drainage 4.15 mi. Anniston Leatherwood Rd., Calhun Co.;
Ala.—**Jesse M. Coble Contractor**, Brandt St., Greensboro, N. C. LB **$2,126,835** c. conc. from Kimbery Bridge N. to Reids Gap 7.846 mi. Int. Rte. 65 Blount and Jefferson Counties;
Ala.—**J. R. Bryant Contr. Co.**, Bell Bldg., Montgomery, Ala. LB **$572,602** base and pav. S. of Clanton to East of Clanton 3.614 mi. Int. Rte. 65, Chilton Co.;
Ala.—**Clyde O. Mitchell**, 104 N. 44, Birmingham, Ala. LB **$509,319** grading, drainage, c. conc. base, c. conc. and underpass S. of Natural Bridge 2.4 mi. Winston Co. CD 4/1.

▲† **Al Johnson Constr. Co.**, 608 Foshay Tower, Minneapolis, Minn. CA **$14,666,487**, constr. Jackson Lock and Dam with control station, water stage and recorder houses, roads and storm drainage, the structure will incl. from right to left bank; a navigation lock, with clear inside dimensions of 110 x 600 ft. and a max. lift of 35 ft. at gated spillway 552 ft. long controlled by 8 individually operated tainter gates a fixed crest spillway 639 ft. long across present river channel and an earth dike about 1,000 ft. long connecting the spillway to high ground on left bank, a 3 story concrete lock control station will be built on the lock wall adjacent to the gated spillway located on the Tombigbee River near Coffeeville, ALABAMA. U. S. Eng., 2301 Grant St., Mobile, Ala. Bids Apr. 3, awarded Apr. 18. CD 4/10, under LB.

BUILDINGS—LB & CA

▲ **Thompson & Street Co.**, P. O. Box 1847, Charlotte, N. C., CA **$4,347,400**, STEAM POWER PLANT—MAIN PLANT BLDG., Indian River, FLORIDA. Orlando Utilities Comn., 102 Wall St., Orlando, Fla. Bids Apr. 15, CD 3/27.

▲ **Edward M. Flemming Constr. Co.**, 4121 NW 25th St., Miami, Fla., CA **$1,999,990**, MEDICAL RESEARCH BLDG. Jackson Memorial Hospital, NW 10th Ave. and 16th St., MIAMI, FLA. University of

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England
Middle Atlantic
South
Middle West
West of Mississippi
Far West

PROPOSED WORK
Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Public Buildings
Mass Housing
Commercial Buildings
Industrial Buildings
Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.

BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.

SOON LETS CONTRACT: SLC

LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily Issue in which last previous report was published.

OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
ENR	Engineering News-Record
CD	Construction Daily

For additional reports see Construction Daily.

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Miami, Dr. Jay F. W. Pearson, pres., 1200 Campo Sano, Coral Gables, Fla. Bids Jan. 15, awarded Apr. 17. CD 2/6, under LB.

▲ **Edward M. Flemming Constr. Co.**, 4121 NW 25th St., Miami, Fla., CA **$1,100,000**, constr. Catholic GIRLS HIGH SCHOOL, east of S. Miami Ave., and N. of Mercy Hospital, MIAMI, FLA. Diocese of St. Augustine, c/o Archbishop J. P. Hurley, c/o Thomas J. Madden, archt., 2344 Biscayne Blvd., Miami, Fla. Bids Mar. 17. CD 4/11, under LB.
Edward J. Gerrits, 3465 NW 2nd Ave., Miami, Fla., CA **$750,000**, constr. Catholic BOYS HIGH SCHOOL, Galloway Rd., (Miami, Fla.).

▲ **Moss-Thornton Co., Inc.**, Leeds, Ala., **Morrison-Knudsen Co., Inc.**, 319 Broadway Ave., Boise, Idaho. CA **$2,225,000** concrete substructure and foundation for Wilsonville Steam Elec. Generating plant WILSONVILLE, ALA. Southern Elec. Generating Co., (Alabama Power Co., Ala. Power Bldg., Birmingham and Georgia Power Co., 75 Marietta St., Atlanta, Ga.) Awarded Apr. 18. CD 3/26/57.

MIDDLE WEST

BUILDINGS—SLC

▲ **Ill., Chicago**—DORMITORY—McCormick Theological Seminary, 2330 N. Halsted St., soon lets contract, 7 story, brick, 78 units, married students dormitory, 900-12 W. Belden, $1,300,000. Hoiabird Root & Burgee, 180 N. Wabash Ave., archts. CD 8/29.

HEAVY CONSTRUCTION—LB & CA

▲ **Kil Bar Electric Co.**, 2261 N. Clybourn Ave., Chicago, Ill., CA **$1,644,015**, automatic block signal system, Median of W. Rte. Superhighway Spec. 80-68-58-5, CHICAGO, ILL. Chicago Transit Auth., Merchandise Mart Plaza, Chicago, Ill. CD 4/26/45.

▲ **The Austin Co.**, 16112 Euclid, Cleveland, O., CA Est. **$4,000,000**, 2 story, 180x200 ft. radio and television bldg., SOUTHFEILD, MICH. American Broadcasting Co., WXYZ Inc., 1700 Mutual Bldg., Detroit, Mich. CD 12/17.

BUILDINGS—LB & CA

▲ **A. Mintz & Sons Bldg. Co.**, 4098 Lee Rd., Cleveland 28, O., CA Est. **$2,500,000**, 10 unit air-conditioned shopping center and 9 one story bldgs. for warehouse use, combination COMMERCIAL BLDG. and SHOPPING CENTER, NE corner Canal and Granger Rd., VALLEY VIEW, O. Decatur Farms, 755 Broadway, Cleveland 15, O. Rudolph J. Orgler, 7113 Euclid Ave., Cleveland 3, O., archts. CD 11/8, under O., Brooklyn Heights.

▲ **F. A. Wilhelm Constr. Co.**, 3914 Prospect St., Indianapolis, Ind., LB **$2,827,027**, SCHOOL of MUSIC BLDG. addn., alterations, BLOOMINGTON, IND. Bd. Trustees, Indiana University, Bloomington, Ind. Bids Mar. 20. CD 3/11.

▲ **Abbott Constr. Co.**, 5789 N. Lincoln Ave., Chicago, Ill., CA **$1,138,083** 2 story, brick John Tyler Headley Elem. SCHOOL, CHICAGO, ILL. Chicago Bd. Educ., 228 N. LaSalle St., Chicago, Ill. CD 3/18, under LB.

▲ **H. E. Working & Assocs.**, 4216 Forest St., Downers Grove, Ill., Own Forces **$2,000,000**, 35 HOMES, sanitary sewers, curbs, gutters, Lee Wood Subd., NORTHBROOK, ILL.

▲ **Miller Builders**, 2707 W. Peterson Ave., Chicago, Ill., Own Forces, **$2,900,000**, 100 HOMES S. of Lake along Hibbard Rd., WILMETTE, ILL. Anton E. Kampf, 3940 Touhy, Lincolnwood, Ill., archt.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—LB & CA

▲† **S. W. Hardwick Co.**, Beardstown, Ill., CA **$1,186,632** est. $1,083,637, channel cutoffs and levees, Section II, along Smoky Hill River and excav. for cutoff channels for river, incl. drainage structures, Salina, CIV-ENG-23-028-58-88, KANSAS. U. S. Eng., 1800 Federal Office Bldg., 911 Walnut, Kansas City 6, Mo. Bids Apr. 3. CD 4/8, under LB.

▲† **United Builders Inc.**, Shawnee, Okla., LB **$2,282,795** est. $2,142,275 (11 bidders), 2 story, brick, masonry, rein.-con. hospital and utilities, Schilling Air Force Base, ENG-23-028-58-29, SALINA, KAN. U. S. Eng., 1800 Federal Office Bldg., Kansas City, Mo. Bids Apr. 15. CD 4/9.

▲ **TEXAS**—State Hy. Comn., Austin, Bids opened 4/15,
Tex.—**Cage Bros.**, 6959 San Pedro Blvd., San Antonio, Tex. LB **$1,424,994** Iron Bridge Reservoir Bridge and approaches 2.364 mi. Hy. FM 35, Proj. C 641-1-7 and 1849-3-3 Hunt and Rains Co. CD 3/28;
Tex.—**Schwope Inc.**, 6623 W. Commer St., San Antonio Tex. LB **$218,999** widen bridges, recond. flex. base and 2 course ST 11.763 mi. Hy. SH 16. Proj. C 290-1 14, Llano Co. CD 4/2.

▲ **TEXAS**—State Hy. Comn., Austin, Bids opened 4/15,
Tex.—**Austin Bridge Co.**, P.O. Box 1590, Dallas, Tex. LB **$837,106** hydraulic embankment and structures 4.733 mi. Hy. St. 361. Proj. S 2298 (1) Nueces Co.; LB **$2,649,100** c. conc., flex. base surf. shoulders and structure widening 7.748 mi. IH 45. Proj. I 569 (24) and 832 (22) Dallas and Ellis Counties. CD 4/2;
Tex.—**Bruce Constr. Co., Inc.**, P.O. Box 7421, Fort Worth, Tex. LB **$1,220,442** c. conc. 0.600 mi. Hy. IH 35 W. Proj. I 473 (18) Tarrant Co.;
Tex.—**Austin Road Co.**, P. O. Box 1590, Dallas, Tex. LB **$1,938,758** concrete flex. base and b. conc. shoulders 7.307 mi. Hy. IH 35 E. Proj. I 230 (8) Denton Co., CD 4/2.

BUILDINGS—LB & CA

▲† **T. C. Bateson**, Box 35351, Airlawn Station, Dallas, 36, Tex., CA **$3,062,706**, 3 story brick, masonry

HOSPITAL, HEATING PLANT, incl. elevators, air-conditioning, kitchen, X-ray, roads, parking, ENG-23-028-58-25, FORT LEAVENWORTH, KAN. U. S. Eng., 1800 Federal Office Bldg., Kansas City 6, Mo. Bids Mar. 25. CD 3/27, under LB.

FAR WEST

HEAVY CONSTRUCTION—BA

▲† **Calif., Muroc**—HOUSING—BA On Or About 5/14—at Base Theater, Edwards Air Force Base, Muroc, armed services housing, consisting of 778 family units to be constr. at Edwards Air Force Base, ENG-04-611-58-200. Plans deposit $100. CD 3/28, under LB.

BUILDINGS—BA

▲ **Wash., Pullman**—VETERINARY CLINIC—BA 5/16—Bd. Regents, Washington State College, 2 story, 92,300 sq. ft. veterinary clinic addn. $1,500,000. Extended date. CD 1/23.

BUILDINGS—SLC

▲ **Calif., Merced**—HOSPITAL—Mercy Hospital, 2470 M St., soon lets contract, Type I 64 bed addn. to Mercy Hospital (incl. surgery, X-ray lab.) $1,200,000. Paul Shattuck, 1713 "M" St., archt. Mac D. Perkins, 110 Sutter St., San Francisco, engr. CD 1/8.

HEAVY CONSTRUCTION—LB & CA

▲ **CALIFORNIA**—State Div. Hys., 120 S. Spring St., Los Angeles,
Clifford C. Bond, 123 N. 3 Ave., Arcadia, Calif. CA **$1,611,881**, constr. 5 mi. 2 lane hy. between Chismahoo Creek and 0.4 mi. east of Santa Ana Creek near Ojai for road relocation made necessary by constr. Casitas Dam on Coyote Creek, Ventura Co. Bids Mar. 27, awarded Apr. 14. CD 3/31, under LB.

▲ **CALIFORNIA**—State Div. Hys., 1120 N. St., Sacramento,
Guy F. Atkinson Co., 10 W. Orange Ave., South San Francisco, Calif. CA **$6,946,853** grading, surf. 8 lane divided freeway and constr. 3 structures on U.S. 99 between Fort Tejon and 2.1 mi. north of Grapevine Station 6.6 mi. in length, Kern Co. Bids opened Apr. 9, awarded Apr. 18. CD 4/11, under LB.

▲ **CALIFORNIA**—State Div. Hys., 1120 N. St., Sacramento,
Fredrickson & Watson Constr. Co. & Ransome Co., 873 81st Ave., Oakland, Calif. CA **$1,374,930** grading, surf. to widen 8.4 mi. State Sign Rte. 89 from south of Squaw Valley Rd. to Donner Creek underpass incl. 64 ft. bridge over Squaw Creek, III-Pla-Nev. 38-C, Placer and Nevada Counties. Bids Apr. 2, awarded Apr. 15. CD 4/4, under LB.

▲ **Charles L. Harney Constr. Co.**, 575 Berry St., San Francisco, Calif. CA **$1,122,293** (2 bidders) access roads for New Giants Stadium, incl. fill over Tidelands, SAN FRANCISCO, CALIF. City and San Francisco Co., City Hall, San Francisco, Calif.

BUILDINGS—LB & CA

▲ **H. Halvorson, Inc.**, Ziegler Bldg., Spokane, Wash., CA Est. **$2,000,000**, 3 story, bsmnt. HOME for the AGED, SPOKANE, WASH. Riverview Lutheran Home, c/o T. A. Myklebust, Medical Center Bldg., Spokane, Wash. F. Pfeiffer, W. 1046 10 St., Spokane, Wash., archt. CD 5/14.

▲† **Dale Benz, J. W. Wells, B. W. Otis**, 1912 W. Grant St., Phoenix, Ariz. LB **$5,634,596** (15 bidders) central repair shop, Marine Corps Supply Center, Spec. 10046-57, BARSTOW, CALIF. Eleventh Naval Dist., 1220 Pacific Hy., San Diego, Calif. Bids Apr. 17. CD 3/6.

▲ **E. H. Moore & Sons**, 693 Mission St., San Francisco, Calif. CA **$1,237,777** (5 bidders) Truckee HIGH SCHOOL addns., Tahoe Lake SCHOOL addns., new Truckee Elementary SCHOOL, TRUCKEE, CALIF. Tahoe-Truckee Unif. School Dist., c/o Supt., Box 1328, Truckee, Calif. Gordon Stafford, 1024½ J St., Sacramento, Calif., archt. CD 9/26/49.

CANADA

HEAVY CONSTRUCTION—BA

▲ **Ont., Brantford**—BA 6/2—Ontario Water Resources Comn., East Block, Parliament Bldgs., Toronto, activated sewage treatment plant with 12.5 m.g.p.d. capacity, incl. detritor bldg., primary settling tanks, aeration tanks, blower bldg., sludge digestion tanks, sludge filter and chlorine bldg., etc. $2,910,000. Proctor & Redfern, 75 Eglinton Ave. E., Toronto, engrs. CD 3/7.

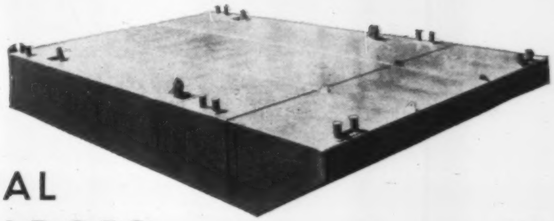
HEAVY CONSTRUCTION—LB & CA

▲ **NEW BRUNSWICK**—N. B. Dpt. P. Wks., Parliament Bldgs., Fredericton,
Canadian Bridge Ltd., 1219 Walker Rd., Walkerville, Ont., CA About **$1,800,000** (8 bidders) fabrication and erection of steel superstructure for 3,600 ft. bridge over St. John River, Fredericton. Foundation Co. of Canada Eng. Corp., Ltd., 1980 Sherbrooke St. W., Montreal, Que., engrs. Bids Mar. 28, awarded Apr. 16. CD 2/26.

▲ **NORTHWEST TERRITORIES**—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont.,
Mannix Ltd., 737-8th Ave., W., Calgary, Alta., LB **$1,876,216** (19 bidders), grading, culverts, crushed rock surfacing from Mile 20 to Mile 58, Yellowknife to Fort Rae development rd., Yellowknife. Bids Apr. 10. CD 3/20.

(Continued on page 68)

MANITOWOC



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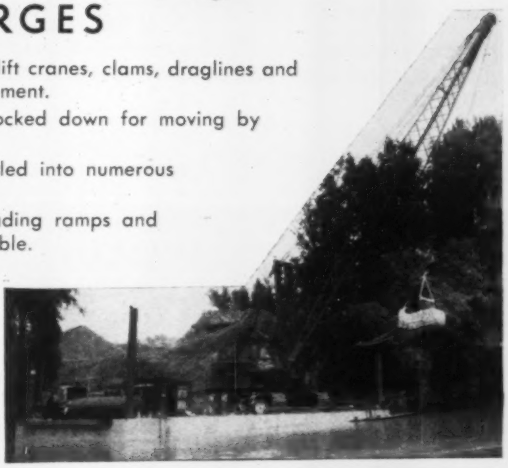

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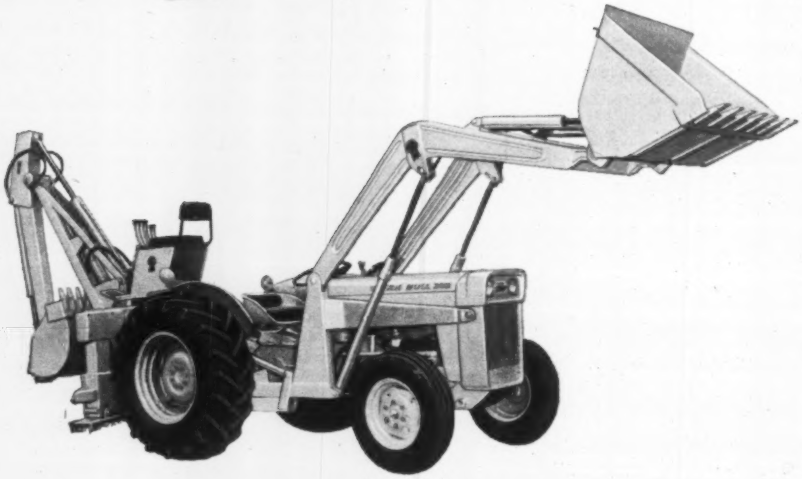
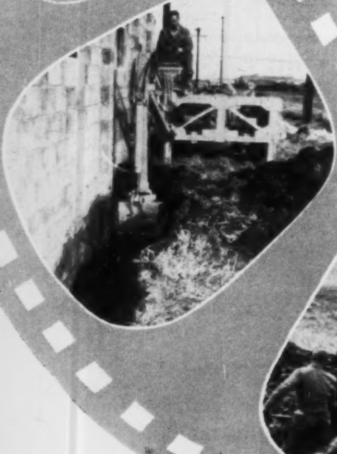


Power-matching of the Work Bull 202 and the Davis Loader-Backhoe eliminates need for bumper, provides greater reach, maneuverability, and "single-unit" efficiency. Built-in mounting assures easy installation, service.



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Work Bull 303 with 500 Loader and Davis Backhoe. Provides highly versatile, heavy-duty rig with utility-type mobility.

Auburn Trencher on the Work Bull 202 will dig in more adverse conditions than any other trencher. It digs to 6' and various widths.

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TO SAVE YOU MONEY ON DIGGING, TRENCHING, DOZING, BACKFILLING, AND MATERIAL HANDLING!

Here is the most efficient and versatile line of light and medium industrial equipment ever made available from a single source – with a single responsibility for both sales and service.

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The **Work Bull 202** has high-torque, 40 h. p. engine that delivers amazing lugging power at low speeds. Full-time power steering, dual-range multi-speed transmission plus many other features increase "on-the-job" efficiency.

Equipped with "matched" Davis Loader-Backhoe you get the most efficient, all-around rig in the utility class.

For larger operations, choose between the **Work Bull 303** with special "power-matched" **Model 500 Loader and Davis Backhoe** . . . or the **Work Bull 1001** Multi-purpose Tractor Loader which is convertible into 8 different machines.

The Work Bull 303 and 1001 feature instant, no-stop reversing without shifting, power-steering, torque converter, direct-line thrust, 52 h. p. engine.

The **Davis Backhoe** is the only machine in the world that lets you dig flush alongside obstructions – as well as handle normal digging assignments. It features 10,000 pounds breakaway, exclusive seat that revolves with the boom so you always face your work . . . and many other features.

Ask for a demonstration of the new Work Bull and Davis equipment including the Work Bull Fork Lift for off-hard surface operations. See if you don't agree that it's the best investment you can make in equipment.

OTHER ALL-NEW POWER-MATCHED ATTACHMENTS FOR WORK BULL EQUIPMENT GIVE UNSURPASSED VERSATILITY

Other power-matched equipment for Work Bull tractors include the famous Auburn Trencher, a pipe and cable layer, post hole digger, soil scoop, cordwood saw, telescoping wagon chassis, side-mounted mower, scarifier-scraper, and multi-purpose blade. In addition, numerous attachments are available for the Davis Loader, Work Bull 1001, and the Work Bull 500 Loader.

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Pipe and Cable Layer buries plastic pipe and electric cable up to 1½" diameter to a depth of 18½" at the rate of 2 to 3 mph.

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SR . . . the dc rectifier type welder with new completely sealed semimetallic rectifier, new transformer and new weld stabilized circuit. Result is easiest arc starting ever; maximum arc stability; sounder, denser welds; current that handles all electrodes in all positions! Four models, 200 to 600 amps.

SRH . . . the same revolutionary improvements that set the Gold Star SR above and beyond the performance standards ever before achieved by a dc rectifier type welder. Designed primarily for compactness, the SRH is only 30¼" high — is ideally suited for stacking or paralleling in minimum space. Three models, 200 to 400 amps.

The miller GOLD STAR ALL STAR LINE

300 . . . combination ac dc welder design comes of age with this new Miller model. Features: new magnetic amplifier circuit; improved wave form; new arc starting control; three electrically controlled current ranges for finest adjustment; instant changeover from ac to dc; built-in high frequency. An entirely fresh concept for inert gas and metallic welding. Four basic models with kits available to convert to seven different types of welders.

300-M . . . an ac welder for inert gas and metallic arc processes. Combines unequalled welding characteristics with Miller's unique electric control circuit which permits precise slow or fast start. Features: built-in high frequency, primary contactor and ½ KVA control transformer. Offered in three basic models of from 200 to 400 amperes with optional water and gas controls available.

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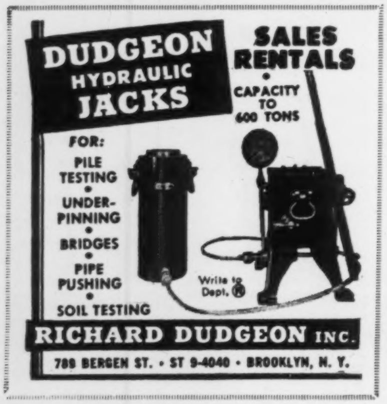

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(Continued from page 65)

BUILDINGS—LB & CA

▲ **Bennett & White (Alberta) Ltd.,** 11239-83rd St., Edmonton, Alta., LB **$2,469,902,** NURSES' RESIDENCE and SCHOOL, EDMONTON, ALTA. Royal Alexandra Hospital Bd., 111th Ave., Edmonton, Alta. Rensaa & Minsos, 9130 Jasper Ave., Edmonton, Alta., archts. Bids Mar. 31. CD 3/11.

▲ **Doran Constr. Co. Ltd.,** 5 Concord St., Ottawa, Ont., Est. **$1,000,000,** 3 story, bsmnt., brick, concrete block walls SEMINARY addn., rein.-con. fdn., OTTAWA, ONT. St. Paul's Seminary, 249 Main St., Ottawa, Ont. Jean Serge Le Fort, 86 Greenfield Ave., Ottawa, Ont., archt. Bids Apr. 2, awarded Apr. 8. CD 3/18.

▲ **Eastern Constr. Co. Ltd.,** P.O. Box 96, Walkerville, Ont., CA Total est. **$1,571,867** (7 bidders) 5 story on 1 side, 6 story on the other, L-shaped, 100 ft. each side wing, structural steel frame, brick, tile walls, HOSPITAL addns., rein.-con. fdn., SARNIA, ONT. St. Joseph Hospital, 290 N. Russell St., Sarnia, Ont. Bids Apr. 7, awarded Apr. 15. CD 3/20.

▲ **D. Lamothe Ltd.,** 509-9th Ave., Noranda, Que., CA **$2,400,000,** 200 cottages and split levels HOUSING, outskirts of BOURCHERVILLE, QUE. Bourgel Constr. Ltd., Suite 700, 455 Craig St. W., Montreal, Que. Bids Mar. 12, awarded Apr. 15. CD 3/6.

ALASKA

HEAVY CONSTRUCTION—LB & CA

▲ **American Service, Inc.,** Spenard, Alaska, LB **$1,282,000** (4 bidders), constr. of new pitched roofs to replace existing flat roofs of 52 bldgs. at Newenham, Romanzof and King Salmon Air Force Stations, Inv. 58-113, ALASKA. Procurement Office, Elmendorf Air Force Base, Alaska.

PROPOSED PROJECTS

WATER SUPPLY

▲ **Calif., Fullerton**—Fullerton City, City Hall, **$3,700,000** bond election June 3 for water sys. development.

▲ **Calif., Ontario**—City Council, City Hall, voted **$1,500,000** bonds Apr. 8, imprvs. in Municipal Water Dist., incl. 20 mil. gal. reservoir and sand filter plant and 2 new wells. CD 3/17.

▲ **Calif., Santa Monica**—City, City Hall, **$2,700,000** bond election June 3, to provide a 25 m.g. reservoir for city. CD 11/15/44.

SEWERS, WASTE DISPOSAL

▲ **Calif., San Diego**—City, City Hall, sewerage treatment plant and sewerage sys. **$26,800,000** (no funds). James M. Montgomery, 535 E. Walnut St., Pasadena, and Holmes & Narver, 828 S. Figueroa St., Los Angeles, consult. engrs. CD 1/26/56.

▲ **Ky., Ashland**—City, F. K. Kyle, mgr., Proj. No. KY. 15-P-3009, sweerage facilities, incl. sanitary interceptor sys., pumping station, force mains and treatment facilities. **$3,750,000.** Watkins & Bell, 553 South Limestone, Lexington, engrs. CD 2/28.

▲ **Wash., Seattle**—Lake City Sewer Dist., 12721 30 Ave. N.E., 43 mi. sewer and 2 mi. trunk line in area from N. and E. 90 to N. and E. 125 St., Bothell Way to Densmore Ave. **$3,350,000.** Hill & Ingman, 3104 Western Ave., Zone 1, consult. engrs. Bids probably this year. CD 11/29.

STREETS AND ROADS

▲ **OHIO**—State Hy. Dpt., Columbus,
Licking Co.—Granville bypass on **Route 16, Granville, $5,000,000.**

▲ **Pa., Charleroi**—Borough **of Charlerol, Boro Hall,** street imprvs. **$2,000,000.**

EARTHWORK, WATERWAYS

▲ **Tex., San Antonio**—San Antonio River Auth., Frank T. Drought, chn. & J. L. Dickinson, 342 W. Woodlawn, flood prevention, Upper San Pedro Creek **$1,500,000;** flood prevention on Upper Alazan Creek, **$1,500,000;** flood protection on Apache Creek, **$1,500,000;** flood prevention on Upper San Antonio River, **$1,500,000.** Bids late 1958 or early 1959. CD 1/17/56.

AIRPORTS

▲ **Pa., Pittsburgh**—RUNWAY—Comrs. Allegheny Co. Greater Pittsburgh Airport, preparation of site for new east-west parallel runway at Greater Pittsburgh Airport. **$2,000,000.** CAA subsidy approved for fiscal 1958.

AMERICANS ABROAD

▲† **Australia, Melbourne**—PLANT—Godfrey L. Cabot, Inc., 77 Franklin St., Boston 10, Mass., U.S.A., and United Carbon Co., Box 1913, Charleston 27, W. Va., U.S.A., carbon block plant, near here. **$4,400,000 (Correction**—owners address). CD 3/28.

PUBLIC BUILDINGS

▲ **Calif., Glendale**—SCHOOLS—Glendale Unif. School Dist., 411 E. Wilson, **$11,000,000** bond election June 3 schools.

▲ **Calif., Los Angeles**—POLICE FACILITIES—City, City Hall, $12,400,000 bond election June 3 for the following:
police station in west valley area, **$648,071.**
New Valley Police Headquarters, **$5,001,683.**

station relocation at Harbor Station, **$846,261.**
University Division Station relocation, **$860,739.**
station in North Valley Dist., **$696,261.**
station relocation at Hollenbeck Station, **$559,072.**
station for park division, **$819,461.**
constr. addns. and addl. parking facilities at Newton St. Station, **$593,747.**
new parking facilities at Georgia St. Station, **$275,940.**
garage relocation, alterations, addn. of parking facilities at Hollywood Division, **$350,117.**
addnl. parking facilities at West Los Angeles Division, **$157,368.**
alterations and parking facilities at Wilshire Station, **$114,852.**
addnl. parking facilities and jail facilities at Highland Park Station, **$94,575.**
addnl. parking facilities and jail facilities at Venice Station, **$132,613.**

▲ **Calif., Los Angeles**—JAILS—Bd Supervs. Los Angeles Co. 501 Hall of Records, bond election June 3, mens jail, **$22,283,000;** womens jail, **$5,835,000;** and constr. detention hospital for tuberculars, **$2,235,000.** CD 7/17.

▲ **Calif., Stockton**—COURT HOUSE—San Joaquin Co., c/o Clerk, bond election June 3 county courthouse, **$6,400,000.** Mayo, Johnson & DeWolf & Clowdsley & Whipple, 307 Exchange Bldg., archts. CD 11/9/56.

▲† **Conn., Groton**—DORMITORY—U. S. Coast Guard Academy, New London, dormitory at Coast Guard Academy. Approx. **$2,000,000.**

▲ **Fla., Ocala**—COURTHOUSE—Bd. Comrs. Marion Co., Town Hall, plans by J. Vance Duncan, 11½ N. Main St., Ocala, and Kemp, Bucch & Jackson, 33 Hogan St., Jacksonville, county courthouse. **$1,500,000.**

▲ **Fla., Ocala**—JUNIOR COLLEGE—Marion Co. Bd. P. Instruction, Ocala, plans by J. Vance Duncan, 11½ N. Main St., and Robert Bittner, Yoakum Bldg., Central Florida Junior College. **$1,500,000.**

▲ **Ill., Springfield**—CITY HALL—City, City Hall, plans by Philip Trutter, 1324 S. MacArthur, city hall. **$2,000,000.** CD 1/13.

▲ **Ind., Indianapolis**—JAIL—Bd. Comrs., Marion Co. Courthouse, plans by McGuire & Shook, 1400 Fletcher Trust Bldg., jail, Washington and Alabama St. **$2,000,000.**

▲ **Ind., New Albany**—CITY-COUNTY MUNICIPAL—New Albany & Floyd Co. Bldg. Auth. plans by Walker, Applegate, Oakes & Ritz, 218 Elsby Bldg., city-county municipal bldg. **$2,300,000.**

▲ **Kan., Kansas City** — LIBRARY, etc. — Bd. Educ., Kansas City Public Library Bldg., 6th and Minn. Ave., Kansas City, Kan., bond election May 6, library and offices. **$6,850,000.** CD 10/28/53.

▲ **Ky., Frankfort**—OFFICE—Commonwealth of Ky., Div. Purchases, Frankfort, plans by Meriwether Marye & Assoc., 248 East Short St., Lexington, 115,000-120,000 sq. ft. office for New State Health Department. **$2,000,000.**

▲ **Mich., East Detroit**—SCHOOLS, etc.—City, voted **$3,500,000** bonds for three elementary schools, four school addns. and Junior High School. CD 6/18.

▲ **Mich., Highland Park**—SCHOOL—City, defeated **$15,000,000** bonds Apr. 8, school constr. CD 3/18.

▲ **Mich., Lapeer** — SCHOOL — Bd. Educ., Lapeer P. School Bd., Lapeer, bond election June 9, high school and two elementary schools. **$1,700,000.**

▲ **Mo., Webster Groves (St. Louis 19 P.O.)**—SCHOOL—School Dist. of Webster Groves, Bd. Educ., Dr. Herbert W. Schooling, Supt. Schools, 16 Selma Ave., $3,055,000 bond election May 8, Junior High School near Brownbert Lane and Rock Hill Rd. **$1,625,000;** Junior High School, Lockwood and Plymouth Aves., **$1,430,000.** Hellmuth, Obata & Kassabaum, Inc., 315 N. 10 St., St. Louis 1, Mo., archts. CD 11/23/53.

▲ **N. J., Trenton**—SCHOOL—Bd. Educ., Twp. of Ewing, Parkway Ave., plans by Micklewright & Mountford, E. Stuyvesant Ave. at Prospect St., elementary-junior high school, Ewingville Rd. and Green Lane. **$2,000,000.** CD 7/14/53.

▲ **N. Y., Ithaca**—ANIMAL HUSBANDRY—Bureau Contracts & Accounts, The Gov. Alfred E. Smith State Office Bldg., Albany, plans by James C. Mackenzie, 5 E. 57 St., New York, Zone 22, bldg. for Department of Animal Husbandry, New York State College of Agriculture, Cornell University. **$2,900,000.** CD 3/27.

▲ **O., Columbus**—ARTS COLLEGE CLASSROOM, etc.—Ohio Dpt. P. Wks., State Dpts. Bldg., 5 story, "Denney Hall" arts college classroom and office bldg., at Ohio State University, **$1,990,000.** Work to start this year.

▲ **O., Garfield Heights**—SCHOOL—Bd. Educ., 4900 Turney Rd., elementary school; high school addn., Rosevelt Elementary School addn. **$2,000,000.** CD 3/18/55.

▲ **Pa., Elkins Park**—HIGH SCHOOL—Cheltenham Twp. Senior School Dist., Elkins Park, high school. **$6,390,000.**

▲ **Pa., Glen Olden**—SCHOOLS—Interboro School Sys. Jt. Senior, Glen Olden, addns. to two high school bldgs. **$1,405,000** and **$1,027,000** respectively. CD 4/26/56.

▲ **Pa., King of Prussia**—SCHOOLS—Upper Merion Twp. School Dist., King of Prussia, high school bldg., **$3,150,000,** and 2 elementary bldgs., **$780,000** each, Upper Merion Twp.

▲† **Va., Fort Lee**—BARRACKS—U. S. Eng., foot of Front St., Norfolk 1, two 3 story masonry block barracks, enlisted men, two company, ENG-44-110-58-29. **$1,500,000.** Bids on or about May 7.

ON ROAD WORK–

Tamping fill around 4 ft. concrete pipe culvert on New York State Thruway Extension near West Seneca, N.Y. The Barco Rammers are owned by S. J. Groves & Sons Co., Syracuse, N.Y.
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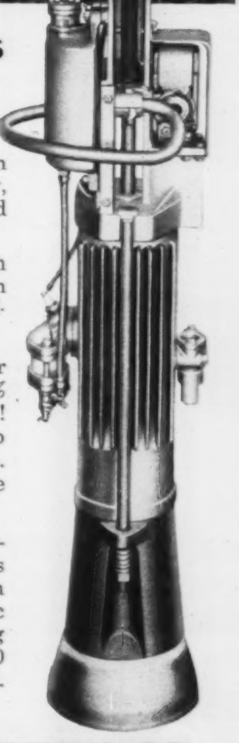

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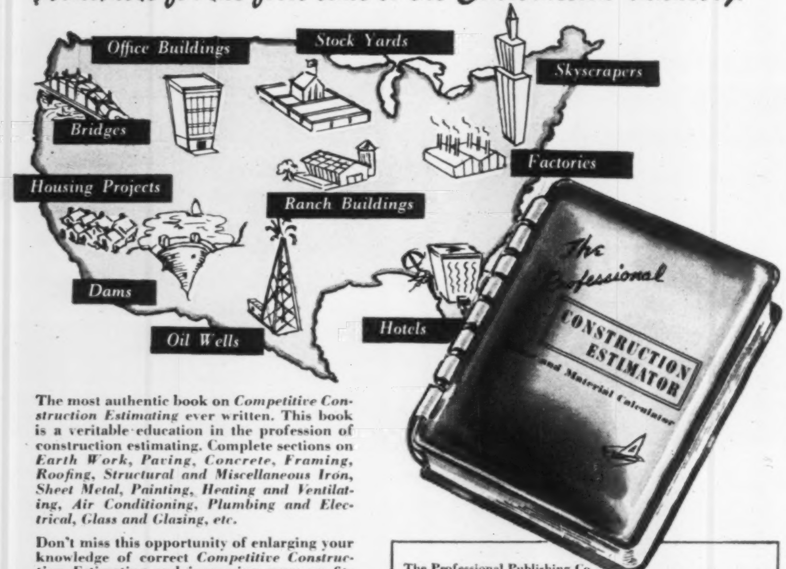

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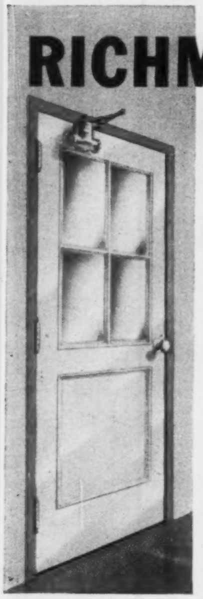

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▲† **Va., Norfolk**—ACADEMIC-ADMINISTRATION—Dpt. Defense, The Pentagon, Arlington, Va., plans by Lûblin McGaughey & Assocs., 220 W. Freemason St., 4 story, 162,000 sq. ft. academic-administration bldg., Armed Forces Staff College, Hampton Blvd. **$4,800,000.**

▲ **Wash., Everett**—SCHOOL—School Dist. No. 2, plans by Botesch & Brown, Commerce Bldg., high school, **$2,173,879.** CD 3/18.

▲ **Wash., Renton**—SCHOOL—School Bd., defeated $2,500,000 bonds Mar. 11, Junior High School, **$1,127,819.** Mallis & DeHart, Lyon Bldg., Seattle, Zone 4, archts. CD 3/7.

▲ **Ont., Ottawa**—HOSPITAL—National Defence Dpt., Parliamentary Bldgs., 7 story, 350-bed hospital, cruciform bldg of contemporary design, for Armed Forces, the Dpt. of Veterans' Affairs and the Royal Canadian Mounted Police. **$8,500,000.**

COMMERCIAL BUILDINGS

▲ **Calif., San Francisco**—HEADQUARTERS—Pacific Telephone & Telegraph Co., 140 New Montgomery plans by Aleck L. Wilson, 315 Montgomery, 7 story 135,000 sq. ft. headquarters bldg. (designed for 9 addnl. stories) **$4,500,000.** Bids in July.

▲ **Conn., New Haven**—HOUSING—Yale University, 119 College St., plans by H. I. Feldman, 415 Lexington Ave., New York, N. Y., housing for 200 families of married graduate students, Westville, **$2,000,000.**

▲ **Mass., Framingham**—RESIDENTIAL DEVELOPMENT—Owner, c/o Robert Z. Moulton, St. Louis Rd., Framingham residential development 80-4 family dwelling units. Phelps, Valentine, Palmer and Gorman Rds. **$1,600,000.**

▲ **N. Y., Manhasset**—HOSPITAL—North Shore Hospital, Valley Rd., plans by Ferrenz & Taylor, 152 W. 42 St., New York, Zone 36, hospital addn. **$3,000,000.** CD 3/21/56.

▲ **N. Y., New York**—HEADQUARTERS—National Maritime Union, 346 W. 17 St., Zone 11, plans by Albert C. Ledner, 3 Bamboo Rd., New Orleans, La., headquarters bldg. on west side of Seventh Ave. between 12th and 13th Sts. **$2,000,000.** CD 4/4.

▲ **N. Y., Woodside**—APARTMENTS etc.—New York Typographical Union No. 6, 624 W. 14th St., New York, plans by Frederick G. Frost & Assocs., 144 E. 30th St., New York, Big Six Towers eight 12 and 16 story apartments, shopping center, Queens Blvd., 58th and 61st Sts., 47th Ave. **$11,723,000.**

▲ **O., Sheffield Lake**—SHOPPING CENTER, etc.—Local Builders, Inc., 4850 E. Lake Rd., constr. shopping center plus 24 apartment bldgs. 112 suites, brick veneer. **$1,750,000.**

▲ **Pa., York**—HOSPITAL—West Side Osteopathic Hospital, 1253 W. Market St., hospital **$2,145,000.**

▲ **Pa., York**—HOSPITAL—York Hospital, 1001 S. George St., hospital. **$3,625,000.**

▲ **Tex., Houston**—MOTELS—Allen Field Enterprises, Inc., c/o Allen Field, 5206 Warm Springs,
Proj. 1, motel, 6903 Telephone Rd. **$750,000.**
Proj. 2, motel, 11915 Dallas Hy. **$750,000.**
Proj. 3, motel, Hy. 73 toward Baytown. **$1,000,000.**
Proj. 4, motel, Katy Rd. **$1,000,000.**
Proj. 5, motel, Old Spanish Trail. **$1,000,000.**
Proj. 6, motel, Main Street site. **$1,000,000.** Constr. 1958.

▲ **Tex., Houston**—HOSPITAL—Methodist Hospital, c/o Texas Medical Center, 6516 Bertner Bend, plans by Milton McGinty, 2425 Ralph St., two 9 story hospital wings. **$7,500,000** Walter P. Moore 2 Pinedale, and Raymond L. Jenkins, 2622 Richmond, Houston, Tex., consult. engrs. CD 6/25.

▲ **Wash., Spokane**—HOSPITAL—Deaconess Hospital, W. 733 4 St., plans by Fugard, Burt, Wilkinson & Orth, 520 N. Michigan St., Chicago, Ill., and Noel E. Thompson, Paulson Bldg., hospital wing and remodeling, **$2,000,000.**

▲ **Wash., Walla Walla**—HOUSES—G. L. Maher, Walla Walla, 150 to 200 Houses in area south of Veterans Admin. Hospital, **$1,500,000.**

INDUSTRIAL BUILDINGS

▲ **Mass., Worcester**—MEAT PLANT—L. B. Darling Co., John L. Jacobson, pres., 256 Franklin St., frozen meat plant. **$1,500,000.** Constr. late 1958.

▲ **Wash., Vancouver**—STORAGE AND DISTRIBUTION TERMINAL—Ideal Cement Co., Northern Life Tower, Seattle, Zone 1, cement storage and distr. terminal. **$2,000,000.**

▲ **Ont., Brockville**—PLANT—Phillips CBA Electrical Co. Ltd., jointly owned by Phillips Electrical Co. Ltd., Kingston Rd., Brockville, and Canadian British Aluminum Co., Lt., 1890 Sherbrooke St. W., Montreal, Que., plant to manufacture aluminum rods, and wire and cable west end of here, **$2,000,000.**

UNCLASSIFIED

▲† **Mo., St. Louis**—ELEVATED RAILROAD IMPRVS.—National Park Service, Jefferson National Expansion Memorial, 415 Market St., Zone 2, plans by Eero Saarinen, W. Long Lake Dr., Detroit, Mich., relocation present elevated railroad tracks on St. Louis River front between Washington Ave. and Poplar Sts. in 960 ft. long tunnel with open cuts at each end (part of $30,000,000 project). **$2,940,000.** CD 3/22/43, under Public Buildings.

▲ **Texas**—COMPRESSOR STATION—Texas Eastern Transmission Corp., Texas Eastern Bldg., Shreveport, La. 6,600 hp. compressor station, near Blessing, Matagorda Co. **$2,388,400.**

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
STREETS AND ROADS
May 6 Massachusetts

▲† **Me., Bangor**—APRON, OPERATIONAL FACILITIES, etc.—BA On Or About 5/23—U. S. Eng., 150 Causeway St., Boston, Mass., apron, operational and hydrant sys., Dow Air Force Base, ENG-19-016-58-159. $3,500,000-$4,000,000. Plans deposit $15. CD 9/17.

BUILDINGS—BA

▲ **Conn., Trumbull**—SCHOOL—BA 5/7—Town, School Bldg. Comn., Middlebrooks Ave., high school. $2,500,000. Lyons & Mather, 211 State St., Bridgeport, archts. Martin J. Bennett, 1627 K St. N.W., Wash., D. C., engrs. CD 3/21, under LB.

▲† **Mass., Falmouth**—HOUSING—BA On Or About 5/27—U. S. Eng. Area Office, 187 Westminster St., Providence, R. I., constr. 488 units family housing (Fy-58) at Otis Air Force Base, ENG-19-016-58-157. $7,000,000-$8,000,000. Plans deposit $50. CD 8/21/56, under Airports.

HEAVY CONSTRUCTION—LB & CA

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, Bids opened 4/22,

J. **F. White Constr. Co.**, Box 358, Westwood, Mass., LB **$3,987,000**, est. $4,735,108, relocation section Rte. 28, incl. 5 bridges. F-359 (2), Middleboro. CD 3/26.

BUILDINGS—LB & CA

▲ **Walter D. Sullivan**, 192 Lincoln St., New Britain, Conn., Owner Builds, **$2,720,000**, 170 HOUSES "Pinnacle Rock Farm", Cook St., PLAINVILLE, CONN. CD 3/6.

▲ **Samuel H. Aron**, 36 Pearl St., Hartford, Conn., Owner Builds, **$2,760,000**, 69 HOUSES, Golf Estates, Belknap Rd. WEST HARTFORD, CONN. CD 6/20/56.

▲ **Housatonic Development Corp.**, 2742 Main St., Stratford, Conn., Owner Builds, **$2,450,000**, 245 HOUSES "Milhaven Heights," Melroy Rd., First Section, WEST HAVEN, CONN. John F. Lynch, 412 Campbell Ave., West Haven, Conn., archts. CD 8/28/56.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
May 9 Pennsylvania
STREETS AND ROADS
May 6, 13 New Jersey May 9 Pennsylvania
May 15 New York

BUILDINGS—SLC

▲ **N. J., Camden**—HOSPITAL—Cooper Hospital, 6th and Stevens Sts., soon lets contract 2 wing hospital addn. **$2,000,000.** Horace B. Nicholson, 215 S. Broad St., Phila., Pa., engr. George Von Uffel, Jr., Haddonfield, archt. CD 3/28.

HEAVY CONSTRUCTION—LB & CA

▲ **NEW YORK**—Dpt. P. Wks., Alfred E. Smith Memorial Bldg., Albany 1, N. Y., Bids opened 4/24,

N. Y.—**Sheridan Construction Corp.**, 3580 Sheridan Dr., Buffalo, N. Y. LB **$195,805**, est. $205,000 (3 bidders) resurf. 1.61 mi. section of East 2nd Street (Rte. 17) in Jamestown, starting at Tiffany Avenue (the city line) and extending southwestward to Winsor Street, present 47-ft. wide road will be resurf. with b. con., Chautauqua Co.

N. Y.—**Parlor City Construction Co.**, Endwell, N. Y. LB **$492,530** est. $504,000 (1 bidder) wid'n. and resurf. 2.07 mi. section of Rte. 41, starting just east of the Rte. 11 intersection near Polkville and extending eastward to the North Street intersection in McGraw, existing 18 ft. wide road will be wid'n. to a minimum of 24 ft. and resurf. with b. conc., Cortland Co.

N. Y.—**Johnson, Drake & Piper, Inc.**, 86 Trinity Pl., New York 6, N. Y. LB **$6,565,662**, est. $7,315,000 (3 bidders) constr. 1.91 mi. four-lane divided section of Scajaquada Creek Expressway and 1.95 mi. of access roads, bet. Niagara Street and Delaware Ave. in Buffalo, incl. will be constr. three bridges, two hy. grade separation structures, one railroad grade separation stucture and five culverts, traffic interchange facilities will be provided at Grant Street and Elmwood Ave., Erie Co.

N. Y.—**Putnam-Hawley Construction Co. Inc.**, Potsdam, N. Y. **$1,297,700** est. $1,400,000 (3 bidders) reconstr. and relocation of 6.63 mi. section Rte. 11, starting a short distance northeast of Phila. and extending northeastward to a point about 1½ mi. north of Antwerp, new road, large sections of which will be on new location in order to improve the alignment, will have a 24 ft. wide b. conc. pavement, Jefferson Co.

N. Y.—**Stanley DiStefano & Sons**, Watervliet, N. Y. LB **$1,251,114** est. $1,438,000 (5 bidders) reconstr. 8.21 mi. section of Rte. 28, starting at the Rte. 7 intersection in Colliersville and extending northward to the Rte. 166 intersection in Milford, existing 18 to 20 ft. wide pavement will be wid'n. to 24 ft. wide b. conc. hy. with extra parking width in Portlandville and Milford, some sections of the new Rte. will be on new location in order to straighten the Route and improve sight distances, roadside safety parking area will be constructed on the west side of the new road just north of Colliersville, Otsego Co.

N. Y.—**Torrington Const. Co. Inc.**, 116 E. Main St., Torrington, Conn. LB **$827,833**, est. $990,000 (7 bidders) relocation of 2.08 mi. section of Rte. 37 on eastern outskirts of Massena, new Hy., which will have two lanes in each direction separated by minimum 100 ft. center mall, will be located parallel to and about 500 ft. south of the existing two-lane road, St. Lawrence Co.

N. Y.—**Hornell Construction Corp.**, 212 Main St., Hornell, N. Y. LB **$846,178**, est. $944,000 (7 bidders) widn. and resurf. 5.58 mi. section of Rte. 70, starting about two miles east of the Rte. 36 intersection at N. Hornell and extending eastward through Howard to Rte. 15, the Rte. will be widn. to a minimum of 24 ft. and resurf. with b. conc., Steuben Co.,

N. Y.—**Economy Paving Co.**, Cortland, N. Y. LB $127,395, est. $143,000 (9 bidders) resurf. 1.43 mi. section of Rte. 96, starting at the north city line of Ithaca and extending northwestward to the county Road 139 intersection, existing 22 ft. wide road will be resurf. with b. conc., Tompkins Co.

▲ **NEW YORK**—Dpt. P. Wks., Alfred E. Smith Memorial Bldg., Albany 1, N. Y., Bids opened 4/24,

Dominion Structural Steel Limited, 6894 Claenald St., Montreal, Que., LB **$1,713,676**, est. $3,077,230 (11 bidders) constr. superstructure on U. S. approach spans to international suspension bridge now under construction across the St. Lawrence River, north of Ogdensburg bet. Chimney Point, N. Y. and Johnstown, Canada, U. S. approach spans will total 2,548 ft. in length, St. Lawrence Co., N. Y. and Greenville Co., Ontario,

LB **$1,731,593**, est. $3,233,775 (10 bidders) constr. super-structure on Canadian approach spans to international suspension bridge being built across the St. Lawrence River north of Ogdensburg, Canadian approach spans will total 2,678 ft. in length, St. Lawrence Co., N. Y. and Greenville Co., Ontario.

▲ **U. S. Steel Co., American Bridge Div.**, Suburban Station Bldg., Phila., Pa. CD **$8,108,385** superstructure railroad bridge over Delaware River between Phila., Pa. and Delair, N. J., PENNSYLVANIA and NEW JERSEY. Pennsylvania RR Co., Penn Center Plaza, Phila., Pa. Bids Feb. 5. CD 2/26 under LB.

▲ **Dick Corp.**, Rte. 51, Large Pa. CA **$5,893,209** general constr. AUDITORIUM with retractable roof, PITTSBURGH, PA. P. Auditorium Auth. of Pittsburgh and Allegheny Co., 1046 Union Trust Bldg. Zone 19, Pittsburgh, Pa. Grand total **$15,404,429**. Bids Feb. 18, Awarded Apr. 11, CD 2/20, under LB;

Wayne-Crouse Inc. of Pittsburgh, 245 N. Neville, Pittsburgh, Pa. CA **$715,260** plumbing (Pittsburgh, Pa.);

Limbach Co., 521 Presley, Pittsburgh, Pa. CA **$1,584,000** heating, ventilating, air conditioning and ice rink; CA **$647,836** metal roof enclosures (Pittsburgh, Pa.);

E. C. Ernst, Inc., 7025 Campania Ave., Pittsburgh, Pa. CA **$2,004,209** electrical (Pittsburgh, Pa.);

American Bridge Co., 525 Wm. Penn Place, Pittsburgh, Pa. CA **$3,985,000** structural work for dome roof (Pittsburgh, Pa.);

American Seating Co., 1776 Broadway New York City, N. Y. CA **$574,915** auditorium seating (Pittsburgh, Pa.)

BUILDINGS—LB & CA

▲ **Turner Constr. Co.**, 150 East 42 St., New York, N. Y., CA Est. **$6,000,000**, 37 story, 2 bsmnts., 1,700,000 sq. ft. OFFICE, west side Ave. of Americas, West 51st and 52nd Sts., NEW YORK, N. Y. Equitable Life Assurance Co., 393 7th Ave., New York 1, N. Y. CD 1/20.

▲ **George A. Fuller Co.**, 11 Beacon St., Boston, Mass., CA Est. **$2,000,000**, 1 story, concrete, frame MUSEUM and ADMINISTRATION BLDG., UTICA, N. Y. Munson-Williams-Proctor Institute, 310 Genesee St., Utica 4, N. Y. Philip Johnson Assocs., 219 E. 44, New York, N. Y., archts. Bice & Baird, Mayor Bldg., Utica, N. Y., consult. archts.

▲ **United Engineers Constructors, Inc.**, 1401 Arch St., Phila., Pa., CA **$72,500,000**, POWER PLANT and required dredging, Hamilton Twp., Duck Island, TRENTON, N. J. Public Service Electric & Gas Co., 80 Park Place, Newark, N. J. J. J. Leary, c/o owner, ch. engr.

▲ **Fidelity Bond & Mortgage Co.**, 16th and Walnut Sts., Phila., Pa. Separate Contracts. **$8,000,000**, 600 RESIDENTIAL DEVELOPMENT, Academy Rd., etc., PHILA., PA.

▲ **Standard Constr. Co.**, 1010 Vermont Ave. N.W., Wash., D. C., LB **$3,165,000**, est. $2,500,000, (5 bidders) constr. 274-units, HOUSING PROJECT DC 1-22, Benning Terrace, G. St., S.E., between 47th St. and Alabama Ave., WASH., D. C. National Capital Housing Auth., 1729 New York Ave., N.W., Wash., D. C. Bids Apr. 22. CD 3/19.

SOUTH

HEAVY CONSTRUCTION—LB & CA

▲ **SOUTH CAROLINA**—State Hy. Dpt., State Hy. Bldg., Columbia, Bids opened 4/15,

S. C.—**Ballenger Paving Co.**, Parris, S. C., LB **$246,685** (3 bidders) b. conc. 10.084 mi. US Rtes 123 and 76 from Seneca to Clemson; resurf. with hot laid c. conc. surf. course 3.93 mi. streets on Clemson College Campus, S.C. Dockets Nos. 37.357.1, 37.366.1, 37.367.1, 39,335.1, and 37.1026 F.A. Proj. Nos. F-38 (9) and F-38 (10) F-38 (12) Pts. 1 & 2, US Rtes. 123 and 76 and streets at Clemsen College, Oconee and Pickens Counties.

S. C.—**Sloan Constr. Co., Inc.**, Peoples National Bank Bldg., Greenville, S. C. LB **$1,492,042** (5 bidders) base and b. conc. surf. 11.222 mi. for 4 lane divided hy. Int. Rte. 85 from Rd. 41 to Pacolet River. S.C. Docket No. 42.485 F.A. Projs. Nos. IN 301-1 (2) & I-301-2 (9), Spartanburg Co.;

S. C.—**W. M. Reagan & Sons, Inc.**, Sumter Hy., Columbia, S. C., LB **$100,463** (5 bidders) bit. surf. 2.629 mi. Roads S-38, S-59, S-939 and Spur and Road S-940 S.C. Docket No. 40.479 F.A. Projs Nos. S-499 (2) S-690 (2) S-1213 (1) and S-1214 (1), Richland Co.;

S. C.—**Boyle Constr. Co.**, Drawer 1491, Sumter, S. C. LB **$2,253,614** grading, etc. 10.588 mi. 4 lane divided hy. Int. Rte. 26 from Rte. 773 to Rte. 19 S.C. Docket No. 36.324 F.A. Proj. No. I-304-2 (2), Newberry Co.;

S. C.—**Kraft & Newell**, Florence, S. C. LB **$257,295** (3 bidders) grading, etc. 2.433 mi. Roads S-64, S-38, S-201, S-202, S-203, S-204, S-110, S-140, S-96, S-154, S-73, S-99, S-78, S-230, S-231, S-233, S-105, S-240, S-236, S-237, S-238, S-63, S-71, S-129, S-150, S-209 thru S-214, S-126 and S-218 thru S-222 S.C. Dockets Nos. 34.297 and 34.298 F.A. Projs. Nos. S-1199 (1), S-1200 (2) S-1201 (1) and S-772 (2), Marion Co.;

S. C.—**J. F. Cleckely & Co.**, Orangeburg, S. C., LB **$2,189,364** grading, 9.069 mi. 4 lane divided hy. Int. Rte. 26 from Rte. 66 to U.S. Rte. 276, S. C. Docket No. 30.370 F.A. Proj. No. I-304-2 (8), Laurens Co.;

S. C.—**Clement Bros. Co.**, Lenoir, N. C. LB **$2,310,323** (9 bidders) grading, etc. 11.027 mi. 4 lane divided hy. Int. Rte. 26 from Rte. 19 to Rte. 66 S.C. Dockets Nos. 30.369 and 36.325 F.A. Proj. I-304-2 (12), Laurens and Newberry Counties;

S. C.—**Dowd Constr. Co.**, Johnston, S. C., LB **$127,930** (5 bidders) grading, etc. 6.969 mi. Roads S-492 and S-164 from Road S-94 to Rte. 14 S.C. Docket No. 23.432 F.A. Proj. No. S-1046 (1), Greenville Co.;

S. C.—**Wham Constr. Co.**, Anderson, S. C. LB **$115,425** (5 bidders) grading, etc. 0.957 mi. Roads S-143, S-55, S-493, S-200, S-404 and Rte. 252 S.C. Docket No. 4.476 F.A. Projs. Nos. S-654 (2), S-1149 (1), S-1184 (1), S-1167 (1), S-1150 (1) and S-1151 (1), Anderson Co.;

S. C.—**Robert E. Goodson**, Darlington, S. C., LB **$95,167** (7 bidders) grading 1.828 mi. Roads S-59, S-60 S-143 and S-164 and Road S-63 S.C. Dockets Nos. 13.354 and 13.355 F.A. Projs. Nos. S-1190 (1), S-1191 (1) and S-1196 (1), Chesterfield Co.;

S. C.—**Ralph W. Crowe**, Woodruff, S. C., LB **$101,017** (6 bidders) grading, 3.988 mi. Roads 64 and 233. S.C. Docket No. 15.323 F.A. Projs. Nos. S-1099 (1) and S-1100 (1) Colleton Co. CD 4/3.

▲ **SOUTH CAROLINA**—State Hy. Dpt., C. R. McMillan, ch. hy. engr., Hotel Columbia, Columbia,

S. C.—**Clement Bros. Co.**, 1433 S. Main St., Lenoir, S. C. CA **$2,186,548** macadam base course and b. conc. surf. 9.057 mi. Int. Rte. 26 from constr. of 4 lane divided hy. from Road 48 to Rte. 773 S.C. Dockets Nos. 32.401 and 36.321-F A. Pronsnos. I-304-2 (17) and I-302-2 (20) Lexington and Newberry Counties;

S. C.—**Ballenger Paving Co.**, Box 927, Greenville, S. C. CA **$611,573** grading, drainage 5.882 mi. Rte. 1-85 for constr. 4 lane divided hy. from Brushy Creek to Road 62 S.C. Dockets Nos. 23.425 and 42.463 F.A. Projs. Nos. I-301-1 (6) and I-201-1 (10) Greenville and Spartanburg Counties. Bids Mar. 18. CD 3/25, under LB.

▲ **GEORGIA**—State Hy. Dpt., 2 Capitol St., Atlanta,

Ga.—**Florida Paving Co. Inc.**, Box 85, Chiefland, Fla., CA **$773,361** constr. S.-0618 (6) constr. 10.705 mi. wid'n. and resurf.; 1 bridge located in Camden Co. and what is locally known as Kingsland-St. Marys Rd. State Route No. 40, beginning at State Rte. 25, in Kingsland, and ending at Dillingham St. in St. Marys, Camden Co.;

Ga.—**Charles R. Sheppard, Inc.**, 1800 Briarcliff Rd., N. E. Atlanta, Ga., CA **$2,569,179**, Contr. No. F.A. Proj. F-006 (2) (8) constr. 9.15 mi. grading and paving and 4 double bridges located in Dougherty Co. on Camilla-Albany Rd. State Route 3, U.S. 19, beginning at Mitchell Co. line and extend. north on relocation to Ste. Route 60 at East Albany, Dougherty Co.;

Ga.—**Ballenger Paving Co.**, Box 927, Greenville, Ga., CA **$1,705,695**, Contr. FAP 1-401-1 (13) constr. 6.183 mi. grading and divided lane paving and 3 highway grade separation, structures located on what is locally known as Adel-Tifton Rd. interstate route 401, beginning at Cook Co. line near State Route 7 and ext. north to the present contract, Tift Co.;

Ga.—**Hugh Steele, Inc.**, Box 398, Centre, Ala., CA **$3,325,466**, Proj. FAT 1-401-1(11) constr. 9.319 mi. grading and 4 lane paving, 1 double stream bridge one frontage road, double stream bridge and one double and six single highway grade separation structure located locally known Tift-Cordele Rd., beginning at the end of Proj. 1-401-1 (10) approx. 1.5 mi. south of the Tift-Turner Co. line and ext. north, Tift and Turner Counties. Grand total $8,373,701. Bids Jan. 31. CD 2/5, under LB.

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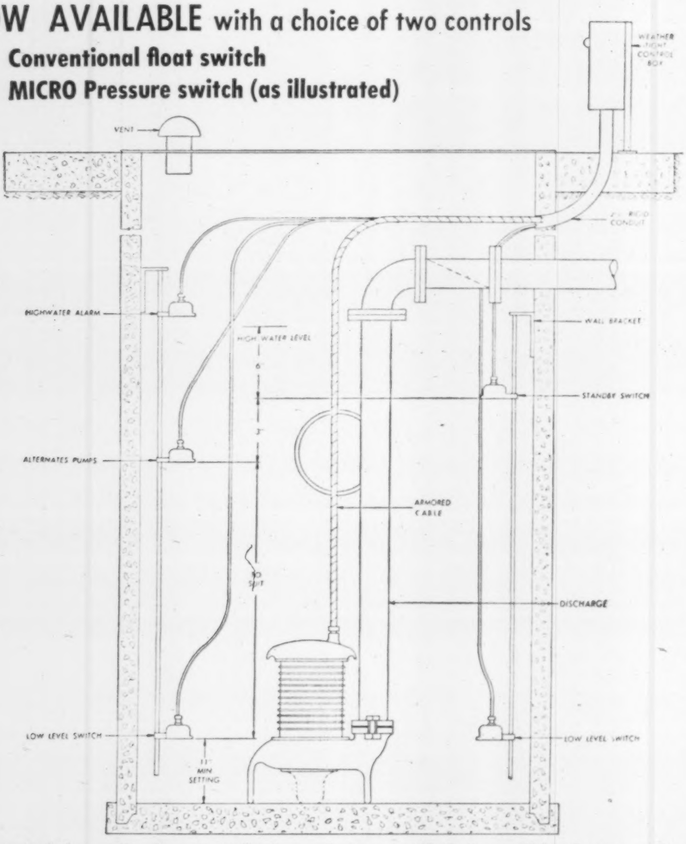

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▲ **Baltimore Contractors, Inc.,** 711 South Central Ave., Baltimore, Md., LB **$5,999,062,** Intracoastal Waterway Tunnel, open ramps, service road 0.621 mi. and related work, Rte. LA 3040, SP 65-30-01, Houma, Terrebonne Parish, LOUISIANA. State Hy. Dpt., R. B. Richardson, dir., Hy. Bldg. No. 3, Baton Rouge, La. Bids Apr. 23. CD 3/24.

BUILDINGS—LB & CA

▲† **C. D. Spangler,** 1028 S. Blvd., Charlotte, N. C., LB **$4,948,643** (5 bidders) 304 units Capehart family HOUSING, on-site imprvs. nad utilities, ENG-44-110-58-21, FORT LEE, VA. U. S. Eng., foot of Front St., Norfolk, Va. Bids about Apr. 23. CD 3/26.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

May 6 Illinois May 7 Michigan

STREETS AND ROADS

May 6 Illinois May 7, 14 Michigan

▲ **O., Cleveland**—BA 5/8—City, Dpt. P. Service, Louis L. Drasler, dir., City Hall, Zone 14, Ridge Road incinerator, $2,500,000. Adache & Assocs., Hollenden Hotel, Cleveland 14, O., engrs. Plans deposit $100. CD 8/20, under LB.

▲ **O., Akron**—AIRPORT TERMINAL—BA 6/15—Comrs. Stark and Summit Counties Court House, Akron and Canton, terminal bldg. at Akron-Canton Airport, $2,836,000. Konarski, Chambers & Stafford, 844 W. Market St., archts. CD 7/31.

BUILDINGS—BA

▲ **O., Columbus**—HOSPITAL, etc.—BA 6/3—White Cross Hospital, 700 N. Park St., 460-bed 8 story hospital, nurses home, Olentangy River Rd. and West North Broadway, $9,000,000. Schmidt, Garden & Erickson, 104 S Michigan Ave., Chicago, Ill. archts. CD 9/19/56, under Public Bldgs., Comrs. Franklin Co. as owner.

BUILDINGS—SLC

▲ **O., Cincinnati**—HIGH SCHOOL—St Xavier High School, 635 Sycamore, soon lets contract, 2-3 story, bsmnt., 3 bldgs., 155x167 ft.; 164x267 ft.; 210x267 ft. high school and rectory, North Bend Rd. $2,500,000. A. V. Walters, 707 Race, archts, Hixson-Tarter & Assoc., 2306 Park Ave., engrs. CD 10/16/56.

HEAVY CONSTRUCTION—LB & CA

▲ **OHIO**—State Dpt. Hys., State Office Bldg., Columbus, Bids opened 4/15.

O.—**Sutton & Stewart, Inc.** and **Hatcher Bros., Inc.,** 841 National Rd., Bridgeport, O., LB **$1,118,862,** est. $1,311,600. (13 bidders) Type T-71 and structures, 1.76 mi. Proj. SR 45-(18.80-19.04) FOFG-576 (6), Columbiana Co.;

O.—**The Peirce Constr. Co.,** 3005 Bellevue Rd., Toledo, O., LB **$5,060,949,** est. $5,532,300, (10 bidders) Type T-71 and structures, 9.784 mi., Proj. USR 25-17.48 0.00 ACI-196 (7), Miami and Shelby Counties;

O.—**Twin Constr. Co.,** Route No. 3, Chillicothe, O., LB **$79,838,** est. $96,700, (8 bidders) Type-35 and structures 0.056 mi., SR 311-0.06, S0243 (6) (Village of Brookville), Montgomery Co.;

O.—**V. N. Holderman & Sons,** 890 Oakland Park Ave., Columbus, O., LB **$2,399,672,** est. $2,604,100, (4 bidders) Type-T-71 and structures, 4.948 mi. SR 1017.97, 0.00 ACI-1105 (21), Morrow and Richland Counties;

O.—**Sidwell Bros.,** Rte. No. 2, S. Zanesville, O., LB **$238,793,** est. $293,100, (6 bidders) Type T-35 on B.-20 1.993 mi., SR 13-33.14, F.-634 (5) (Perry and Fairfield Counties) Perry Co.;

O.—**The American Constr. Co.,** 4100 Brookpark Rd., Cleveland, O., LB **$254,143,** est. $230,700, (2 bidders) Type T-35, 2.954 mi., SR 291 (0.00-2.06) (Brookpark Village) (Middleburgh Heights Village), Cuyahoga Co. Bids Apr. 15. CD 3/26.

▲† **George W. Timmons,** 780 West Lane Ave., Columbus 21, O., LB **$2,955,767,** constr. 100-bed hospital, Lockbourne Air Force Base, ENG-46-022-58-9, COLUMBUS, O. U. S. Eng., 237 Fourth Ave., Huntington 18, W. Va. Bids Apr. 22. CD 3/11.

BUILDINGS—LB & CA

▲† **Heftler Constr. Co.,** 9374 Brighton Way, Beverly Hills, Calif. CA **$7,237,500,** constr. 450-units Capehart HOUSING, Chanute Air Force Base, RANTOUL, ILL. Contracting Officer, Chanute Air Force Base, Rantoul, Ill. CD 2/19.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

May 9 Minnesota May 13, 14 Texas

STREETS AND ROADS

May 9 Minnesota May 13, 14 Texas

▲ **Minn., Austin**—BA 5/9—City, J. H. Weiland, recdr., sewage disposal plant, etc. $2,250,000. Greeley & Hanson, 220 South State St., Chicago, Ill., engrs. CD 1/16.

BUILDINGS—BA

▲† **Tex., Marshall** — POLYSULFIDE PROPELLANT FACILITIES—BA 5/21—U. S. Eng., P. O. Box 867, Little Rock, Ark., polysulfide propellant facilities, Longhorn Ordnance Plant, ENG-03-050-58-49, $3,000,000-$5,000,000. CD 4/21.

▲† **Minn., Duluth**—HOUSING—BA On Or About 5/22—Procurement Office, 343 Fighter Group, U. S. Air Force, 500 Fidelity Bldg., 240 family housing units-row houses, Capehart-Title VIII, Duluth Air Force Base, IFB 21-603-58-59. $3,900,000. Plans deposit $50. Extended date. Melander-Fugelso & Assocs., 603 Alworth Bldg., Zone 2, archts.-engrs. CD 4/3.

HEAVY CONSTRUCTION—LB & CA

▲† **Morrison-Knudsen Co., Inc., Peter Kiewit Son's Co., Al Johnson Constr. Co., Condon-Cunningham Inc., F & S Contracting Co.**, 603 Hoge Bldg., Seattle, Wash., CA **$13,613,613** power structure intake shafts and upstream tunnels, near Pierre, Oahe Reservoir Proj., ENG-25-066-58-53, SOUTH DAKOTA. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Mar. 25. CD 4/3, under LB.

BUILDINGS—LB & CA

▲ **John Epple Constr. Co.**, 1417 Hickory St., Columbia, Mo., LB **$2,620,600** Base Bid (4 bidders), 6 story, bsmnt., brick, steel, concrete, etc. HOSPITAL addn. to Boone Co. Hospital, COLUMBIA, MO. Boone County Hospital Bd. Trustees, Charles H. Trimble, pres., Columbia, Mo. Bids Apr. 16. CD 3/25.

▲† **J. W. Bateson**, Walnut Hill Station, Dallas, Tex., CA **$9,834,000**, 610 units Capehart HOUSING at Richards Gebaur Air Force Base, No. 23-608-58-53, GRANDVIEW, MO. Procurement Officer, Bldg. 541, Base Theater Bldg., Richards-Gebaur Air Force Base, Grandview, Mo. Bids Mar. 26. CD 3/28, under LB.

▲ **Winn-Senter Constr. Co.**, 901 W. 43 St., Kansas City, Mo., CA Est. **$2,500,000**, 11 story, bsmnt., sub-bsmnt., 106x260 ft., brick, rein.-con. APARTMENT BLDG. "F", incl. 121 apartments, kitchen, pent-house, etc., KANSAS CITY, MO. Quality Hill Towers, West Terrace Redev. Corp., 520 R. A. Long Bldg., Kansas City, Mo. Bids Feb. 15. CD 1/10.

▲ **Harmon Constr. Co.**, 100 South Indiana, Oklahoma City 3, Okla., CA Est. **$7,500,000**, St. Francis HOSPITAL, TULSA, OKLA. Wm. K. Warren Foundation, c/o Mr. Wm. K. Warren, Warren Petroleum Corp., 1340 S. Boulder, Tulsa, Okla. Bids Mar. 26, awarded Apr. 10. CD 2/18.

▲ **J. M. Odom**, Box 774, Austin 64, Tex. CA **$2,012,382** Base Bid. State HEADQUARTERS BLDG., AUSTIN, TEX. Texas Employment Comn., c/o Col. S. Perry Brown, State Bldg., Austin, Tex. Bids Apr. 16. CD 4/8.

▲† **George A. Rutherford**, Box 1778, Albuquerque, N. M., LB **$3,254,707** (4 bidders), 213 units Capehart HOUSING, Sandia Base, ALBUQUERQUE, N. M. U. S. Eng., Box 1538, Albuquerque, N. M. Bids Apr. 8. CD 3/21.

FAR WEST

HEAVY CONSTRUCTION—BA

▲† **Calif., Muroc** — HOUSING — BA 5/14 — At Base Theater, Edwards Air Force Base, Muroc, armed services housing, consisting of 778 family housing units at Edwards Air Force Base, ENG-04-611-58-200; $12,000,000. Plans deposit $100. CD 4/21.

▲† **Calif., Miramar**—RUNWAY, etc.—BA 5/23—Eleventh Naval Dist. Commandant, 937 Harbor Dr., San Diego, exten. runway and taxilway, installation of optical landing sys. for Runways 24L and 24R and an approach lighting sys. for Runway 24R at Naval Air Station. $2,500,000. CD 9/17.

BUILDINGS—BA

▲ **Calif., Los Angeles**—STEAM TURBINE GENERATING UNITS—BA 5/20—Los Angeles Dpt. Water & Power, 311 S. Spring St., furnishing, erecting on existing foundation at Haynes Steam Plant in Seal Beach two 200,000 kw. steam turbine generating units. $15,000,000. Extended date. CD 4/17.

▲† **Calif., Sacramento**—HOUSING—BA 5/22—Base Procurement Office, Bldg. 2554, Mather Air Force Base, Sacramento, 220 family housing units, armed services housing, Mather Air Force Base, ENG-04-612-58-26. $3,500,000. CD 4/24.

▲† **Ore., Corvallis**—HOUSING—BA 5/22—U. S. Eng., 4735 E. Marginal Way, Seattle 4, Wash., 150 housing units, Capehart Housing. $2,500,000. CD 3/20.

▲ **Calif., Long Beach**—COUNTY—BA 7/2—Los Angeles Co., Hall of Records, Los Angeles, 6 story rein.-con. Long Beach County bldg. $5,128,501. CD 7/24/56.

HEAVY CONSTRUCTION—LB & CA

▲† **Western Electric Co.**, 195 Broadway, New York, N. Y. CA automatic equipment for Continental Air Defense SAGE program Stead Air Force Base, RENO, NEV. Dpt. Defense, Pentagon, Arlington, Va. CA Total est. **$4,600,000.** Burns & Roe, Inc., 160 W. Broadway New York, N. Y., engr. CD 9/17;
Stolte, Inc., 8451 San Leandro, Oakland, Calif. CA 3 story 180,000 sq. ft. windowless bldg. (Reno, Nev.)

▲† **Western Elec. Co.**, 195 Broadway, New York, N. Y., CA automatic equipment Continental Air Defense SAGE program BEALE AIR FORCE BASE, CALIF. Dpt. Defense, Pentagon, Arlington, Va. Total est. **$4,675,815.** Burns & Roe, Inc., 160 W. Broadway, New York, N. Y., engrs.
Stolte Inc., 8451 San Leandro St., Oakland, Calif. CA 3 story 180,000 sq. ft. windowless bldg. (Beale Air Force Base Calif.).

▲ **J. E. Young Pipeline Contractor, Inc.**, 931 E. Rosecrans Ave., Los Angeles and **Baker-Anderson Corp.**, 650 Berry St., Brea, Calif. CA **$8,766,694** (joint venture). constr. portion second San Diego Aqueduct consisting of 18 mi. pipe line and pertinent work, SAN DIEGO, CALIF. San Diego County Water Auth., 2750 4th Ave., San Diego, Calif. Bids Apr. 11, Awarded Apr. 17. CD 4/17, under LB.

BUILDINGS—LB & CA

▲ **Rust Engineering**, 575 6 Ave., Pittsburgh, Pa. CA **$16,000,000**, POWER STATION addn. MAGNA, UTAH. Utah Copper Division, Kennecott Copper Corp., Kearns Bldg., Salt Lake City, Utah. Bids Mar. 21. CD 2/25.

▲ **Diversified Builders**, 1616 S. Greenwood Ave., Montebello, Calif. CA **$3,433,052**, rein.-con. curtain wall stud and plaster partitions air-conditioned COURTHOUSE, LAS VEGAS, NEV. Clark Co., Courthouse, Las Vegas, Nev. Bids Apr. 7, CD 2/10.

CANADA

BUILDINGS—BA

▲ **Que., L'Assomption**—COLLEGE—BA 5/5—College L'Assomption, L'Assomption, 3 story college addn. to provide dormitories, chapel, laboratories, gymnasium, library, etc. $2,000,000. Crevier, Lemieux & Mercier, 1065 Pratt Ave., Montreal, archts. Brouillet & Carmel, 3600 Barclay Ave., Montreal, engrs. CD 5/9/57.

HEAVY CONSTRUCTION—LB & CA

▲ **Donovan Constr. Co. of Canada Ltd.**, 78 Queen Elizabeth Blvd., Toronto, Ont., CA Est. **$2,747,081**, approx. 150 mi. natural gas pipe line within Port Hope, Trenton, Belleville, Napanee, Ganahoque, Prescott and Cornwall, ONTARIO. Lakehead Natural Gas Ltd., 308 Bagot St., Kingston, Ont., and 335 Bay St., Toronto, Ont. Commonwealth Services, Inc., Engrs., Dalton Block, Kingston, Ont., engr. Awarded Apr. 11. CD 8/15.

ALASKA

▲† **Peter Kiewit & Sons Co.**, 1024 National Bank Bldg., Omaha, Neb., CA **$4,897,217**, est. $4,000,000, facilities for package atomic reactor heat and POWER PLANT, FORT GREELY, ALASKA. U. S. Eng., Anchorage, Alaska. Awarded Apr. 21. CD 4/17, under LB.

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LIMA Roadpacker speeds freeway construction near Colfax, California

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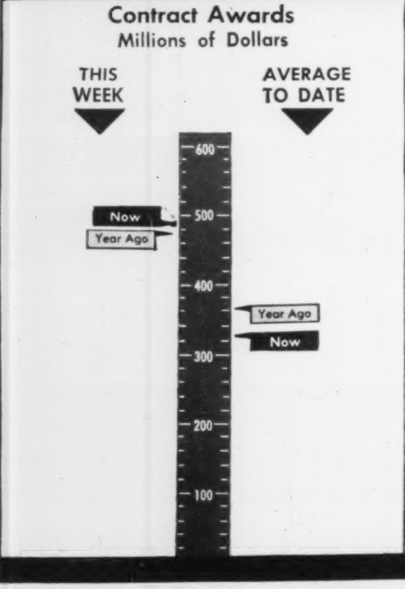
Construction Scoreboard

ACTIVITY THIS WEEK

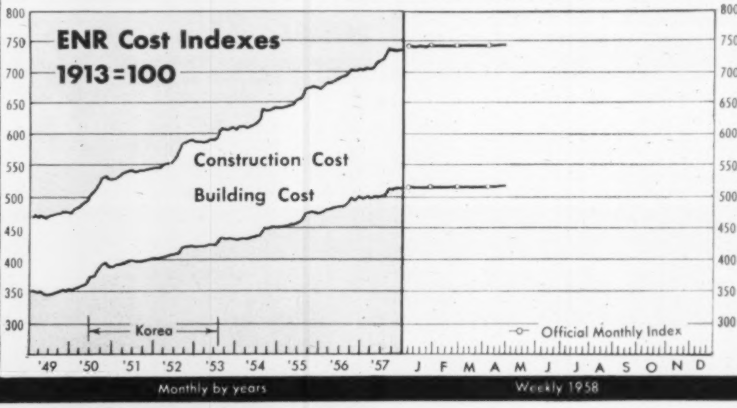


COST INDEXES AS OF NOW

ENR INDEXES (1913=100), 20-cities' average	Week of Apr. 24 1958	% Change from Mar. 20 1958	% Change from Apr. 25 1957
Construction Cost	747.17	+0.4	+5.1
Building Cost	518.14	+0.4	+3.3

Official April Indexes appeared here April 10; official May Indexes will appear here next week.

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.850.
1949 = 100: Divide Construction Cost by 4.770; Building Cost by 3.518.



AMOUNT OF CONTRACTS LET

By Ownership	This Week millions	Cum. 18 wks 1958 millions	Cum. 18 wks Chge '57-'58 %
All Heavy Constr.	$485.6	$5,900.2	−9
Private	228.9	2,794.1	−8
Public	256.7	3,106.1	−10
State & Municipal	182.3	2,425.9	+2
Federal	74.4	680.2	−36
By Type of Work			
Public			
Waterworks	14.2	100.4	−6
Sewerage	6.5	186.2	+24
Bridges*	13.0	162.1	−37
Highways	63.9	950.2	−3
Earthwork, Waterways	22.4	252.8	−46
Buildings, Excl. Housing	78.9	807.7	+5
Housing	24.1	364.7	+42
Unclassified	41.9	290.1	−37
Private			
Mass Housing	77.7	1,243.8	+17
Commercial	44.7	643.5	+5
Industrial	94.2	740.3	−38
Unclassified	4.1	158.4	−18

* Includes private bridges.

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

NEW CAPITAL FOR CONSTRUCTION

	Week of Apr. 24 millions	Cum. 17 wks 1958 millions	Cum. 17 wks Chge '57-'58 %
Corporate Securities	$53.5	$1,964.2	−10
State and Municipal:			
All Except Housing	184.1	2,344.7	+24
Housing	...	20.3	−51
Federal Loans	7.9	70.1	+13
Federal Aid	...	....	...
Total Nonfederal	$245.5	$4,399.4	+5
Federal Appropriations:			
Projects in U. S.	...	$603.2	...
Outside U. S.	...	....	...
Total New Capital	$245.5	$5,002.6	+20

BACKLOG OF PROPOSED HEAVY CONSTRUCTION

	Mar. 1958 (millions)	Percent Change from last Month	Percent Change from last Year
Total U. S. (ENR reported)	$113,007	+0.4	+6.4
By Ownership—			
Private	47,741	+0.3	+6.6
State and Municipal	51,261	+0.4	+6.9
Federal	14,005	+0.9	+4.0
By Type of Work—			
Waterworks	2,420	−0.2	+7.3
Sewerage	3,403	−0.5	+3.4
Bridges	3,445	+2.2	+12.5
Highways	13,401	+0.8	+1.8
Earthwork, Waterways	12,300	+0.1	+9.4
Public Buildings	20,261	−0.1	+5.5
Industrial Buildings	16,808	+0.4	+2.9
Commercial Buildings	21,047	+0.3	+10.6
Unclassified, Private	9,886*	+0.1	+4.9
Unclassified, Public	10,035	+1.7	+9.1

* Includes Private Bridges, $86 million

FLOW OF NEW PROJECTS INTO THE BACKLOG

	1958 Mar. (millions)	1958 3-months (millions)	Percent Change from '57 Mar.	Percent Change from '57 Year Cum.
Total U. S. (ENR reported)	$1,661	$4,682	− 5.1	−20.3
By Ownership—				
Private	589	2,062	−32.4	−32.9
State and Municipal	764	2,172	+10.3	−12.9
Federal	308	448	+65.6	+47.8
By Type of Work—				
Waterworks	11	37	−75.2	−65.4
Sewerage	27	173	−61.2	− 6.7
Bridges	90	191	+775.9	+13.2
Highways	270	623	+84.5	−32.3
Earthwork, Waterways	72	110	+4,838.3	+88.4
Public Buildings	372	982	−27.5	−11.6
Industrial Buildings	199	439	−55.4	−62.1
Commercial: Mass Housing	213	657	+56.9	−22.1
Other Building	139	878	−43.5	+ 7.5
Unclassified, Private	38	88*	−10.4	−65.6
Unclassified, Public	229	503	+147.2	+105.1

*Includes Private Bridges, $500,000

FLOW OF PROJECTS OUT OF BACKLOG INTO CONTRACTS

	1958 Mar. (millions)	1958 3-months (millions)	Percent Change from '57 Mar.	Percent Change from '57 Year Cum.
Total U. S. (ENR reported)	$736	$2,100	− 5.4	−13.2
By Ownership—				
Private	224	720	−17.9	−24.3
State and Municipal	404	1,119	+24.4	+ 4.7
Federal	108	261	−40.0	−34.7

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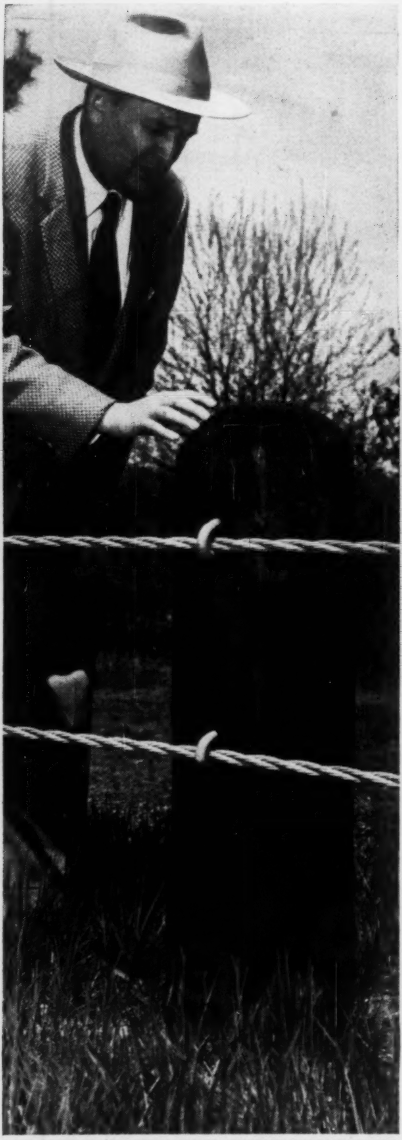
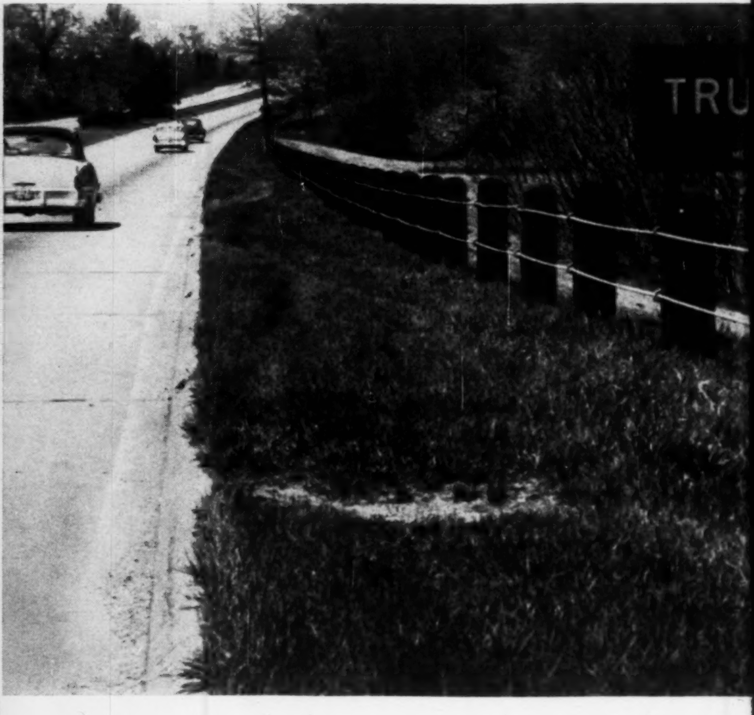


Mr. Clinton Peterson, Division Engineer of Maintenance, says, "Pressure-creosoted posts are the best and most economical. They last from 25 to 30 years."



Posts untreated
rot out in 5 to 10 years.

The Merritt Parkway in Connecticut, opened in 1938, was one of the first of the modern toll roads. The original rustic guard rails were generally of oak or chestnut dipped in a preservative bath. These showed early signs of deterioration according to Mr. Clinton R. Peterson, Division Engineer of Maintenance. Some of the posts lasted only five to ten years—and replacement was costly.

Obviously a change had to be made to save taxpayers' money. Wood preservation experts from the highway department, a university forestry school and the Connecticut Agricultural Experiment Station began a study. After much experimentation, the conference reported

Pressure-creosoting doubles the life of guard rail posts on Merritt Parkway

135,000 feet of guard railing, supported by pressure-creosoted posts, is used on the Merritt Parkway. Note the reflectors on every post for night visibility.

that *pressure treatment with creosote was the preferred choice of all these authorities.* At that time, full-length pressure-creosoted posts were made the standard in the state. Pressure-creosoted posts have a life expectancy of 25 to 30 years.

The original rustic railings were replaced with steel cable guard rails firmly supported by pressure-creosoted posts. The domed-top post was favored for its looks and water shedding ability. Some beveled-top posts were used and appear to have about equal life.

This experience on the Merritt Parkway and other Connecticut highways verifies the results being obtained all over the country. The deep penetration of pressure creosoting is needed to assure adequate protection—not only from rot but from termites and other wood destroying insects as well.

U. S. Steel does not make pressure-creosoted posts but supplies much of the creosote used by the treating industry. Why not take advantage of this easy way to reduce highway costs? Pressure-creosoted posts are readily obtained in most areas. For information, write United States Steel, 525 William Penn Place, Pittsburgh 30, Pa.

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TRADEMARK

Business and Finance

Baltimore Renewal Faces Uphill Pull

Latest plan for urban redevelopment requires many approvals; one turn-down could shelve it

Private initiative and legislation are no guarantees that the vital job of modernizing the nation's cities will be easily started and quickly completed. And a closer inspection of a major proposal for Baltimore perhaps could leave the impression that there is too little private initiative and too much legislation. But because of the large expenditure of government funds, the laws require close public scrutiny of any urban redevelopment program.

Recently a group of Baltimore business and industrial leaders unfolded an elaborate plan for the razing and rebuilding of 22 acres in the city's downtown business section.

Estimated cost of the project is $164.7 million. This total includes federal urban renewal funds, the city's share of renewal expenses, possibly federal funds for a government office building, and private investment. However, the figure does not include interest charges on bonds the city would sell to cover its share of redevelopment costs. Of the $164.7 million, approximately $65.2 million would be public funds of one form or other, equal to 39.5% of the total. Private enterprise would provide the remaining $99.6 million, or 60.5% of the total investment.

• **Expenditure breakdown**—The expenditures by private sources would be made for the following: $59.4 million—office buildings; $10 million—stores and commercial buildings; $11.3 million—hotel; $12 million—underground parking facilities for 4,000 cars; $6.8 million—cost of land to private developers.

Public expenditures would include: $17.2 million—city's share of land acquisition; $29 million—federal costs of the program under urban renewal; $19 million—federal office buildng.

Although the amount that private enterprise would provide is large, the money that would come from public treasuries is no bagatelle. And to shake the expenditure loose will require time and public approval of the required financing. The latter is vital, because until public money is provided, no funds will be forthcoming from the private sector.

• **Barriers to accomplishment**—Hunter Moss, an investment banker who heads the Greater Baltimore Committee, makes no effort to minimize the legal obstacles that must be hurdled before the project can come close to reality.

Any one of the following requirements could balk the plan and place it on a shelf to gather dust. The necessary steps to be taken are:

1. Adoption of the plan by the Baltimore Urban Renewal and Housing Agency after conferences with the City Planning Commission. (This apparently will not be difficult, because Oliver H. Winston, renewal agency director, was among the first to praise the plan.)
2. Approval by the 21 member City Council. (Presently, Mayor Thomas D'Alesandro has control of the body and he has given cautious endorsement. He said the proposal was "magnificent" but declined to approve specific details, turning the plan over to city department heads for their study with instructions to review it "with a postive attitude".)
3. Authorization by the Maryland General Assembly of a bond issue to pay for the city's share of the program costs. (The city has 42 representatives to be convinced, and the legislature usually goes along with members most closely concerned with local bills.)
4. Favorable action by the City Council that will place the bond issue proposal on a ballot.
5. Favorable action by the Board of Estimates that will place the bond issue proposal on the ballot.
6. Approval by the voters of the bond issue proposal.
7. Acquisition of the 251 separate land parcels in the tract.
8. Purchase and redevelopment of the properties by the city, private enterprise, and the federal government if a government office building is constructed in the area.

If the state legislative session of 1959 approves the bond issue for the city ballot, it would be possible for it to appear on the referendum in May of the same year, which would clear the way for a start and land acquisition. Under the best of circumstances, demolition would start in 18 months.

• **A key perhaps lost**—Believed to be a key feature of the project is the proposal to construct a $19 million, 20 story federal office building in the area. When the report was prepared, it was planned that the structure would be built under the General Services Administration's lease-purchase program. This would have placed the structure under private ownership, with the federal government being only a tenant. Tax income, therefore, would be derived from the building.

But following release of the redevelopment plan by the group that sponsored the study, the House of Representatives acted to kill the lease-purchase program by voting a direct appropriation for construction of all buildings scheduled under lease-purchase. Should the Senate confirm the action of the House, any federal office building built in the area with federal funds would be tax-exempt for the reason that it is federal property. The presence of $19 million in tax-exempt property would sharply lower the estimated tax income of $2.1 million from the rehabilitated and renewed area. City officials and the voters could very well take a sharp second look at the project if such a large piece of untaxed property remained in the 22 acre tract.

Interstate Squabble

New Jersey, Delaware feud over operation of bridge

A lowering of toll charges effective June 1 on the Delaware Memorial Bridge (ENR Apr. 17, p. 176), last week brought to the surface a noisy squabble between New Jersey and Delaware. When the Delaware Interstate Highway Division—the agency operating the span—announced the approximately one-third reduction in tolls, it explained that the move was made in order to extend the term of bond debt on the structure.

Although Congressional authorization for the interstate bridge called for a toll-free crossing after debt was retired in 1978, the flow of income under the current toll rates would have paid off the debt entirely in three to four years. The bridge, being the full responsibility of Delaware, would then cost the state an estimated $1 million yearly to maintain. This amount would come out of state funds. But Garrett E. Lyons, chairman-director of the administering agency, said that the structure should never become a burden on the taxpayers of Delaware, particularly when "90% of the traffic across it is from outside of Delaware."

At the same time the toll reduction was announced, the division also described plans for a possible $8 million improvement and maintenance program, with the initial near-term outlay perhaps as high as $2.5 million.

• Verbal blasts—Reaction to the announcements came fast from New Jersey and in turn brought a counter-blast from Delaware authorities.

New Jersey State Senator Charles W. Andman immediately called for a suit in the U. S. Supreme Court to block "unneeded spending by the Delaware Interstate Highway Division." Then a spokesman for Gov. Robert B. Meyner announced that the New Jersey chief executive is contemplating a federal court case if Delaware spends money to extend the period of toll collecting.

The spokesman also implied that Governor Meyner and Gov. J. Caleb Boggs of Delaware see eye-to-eye on the need for an interstate authority to operate the bridge and any future bridges and ferries between the two states. He added, the only issue in the dispute is how to divide the income from the existing bridge. Mr. Lyons of the Delaware highway agency already has rejected a 50-50 split.

• Possible Congressional action—Soon after, Mr. Lyons announced that Delaware has drafted a bill for submission to Congress that would allow the state to collect tolls to cover maintenance, repairs and operation costs even after 1978 when the bridge is legally required to become toll-free.

This same bill also would attempt to by-pass New Jersey in its demands for a share of the bridge's toll receipts and equal representation on the Bridge Commission.

Utility Wins Fight

Court blocks opponents of $25 million project

A unanimous decision by the Connecticut State Supreme Court of Errors has struck down the last obstacle to construction of a $25 million power plant on Manresa Island, near Norwalk, Conn. The decision upheld the State Public Utilities Commission's approval of the project and ended 5½ years of legal scuffling between residents of the area and the Connecticut Light and Power Co.

Officials of the utility said work would begin "as soon as possible." Land surveys have been completed.

Manresa Island is actually a peninsula lying off the southern tip of Norwalk. Until 1952 the 23-acre site of the electrical generating station was a vacation area owned by a religious order. When it was sold and the area rezoned, local opposition to the project flared up. The rezoning was approved, however, by both the Superior Court and the Public Utilities Commission.

Taking a new tack, the Greater Norwalk Improvement Association, one of the groups on the shore, asked the city to condemn the land for development as a recreation area. This idea was opposed by several Norwalk groups on the grounds that a recreation area would be a tax burden, while a power plant would add $400,000 a year to the city's tax income. A special referendum decisively quashed the Improvement Association's idea.

The final court test came on a technical issue—whether the utility had the right to sell power to the Connecticut Power Co., which serves the Stamford-Darien area, actually out of Connecticut Light and Power's own franchise area. The court ruled that, because the utility is the successor to the Housatonic Power Co. and the Rocky River Power Co., it holds their charter authority to sell power in the area.

The Only Customer

Trial blocks $29 million project; discourages state

The $29 million convention hall proposed for Chicago's lakefront has been tied up in legal knots by opposition groups seeking to block sale of a bond issue to finance the project. What's more, evidence brought out at the trial in progress in Chicago's Circuit Court may have waved off the only interested investor—the State of Illinois.

The project's sponsor, the Metropolitan Fair and Exposition Authority, offered to the money market, $25 million in 5% revenue bonds last February. But the investing community was dubious and made no move to buy. At the same time, statements by State Treasurer Elmer Hoffman showed the state was considering purchase of the bonds. Then Kellogg Fairbank, wealthy Chicago realtor, stepped in with a taxpayer's suit.

Testimony at the trial disputed the authority's comfortable estimate of expected earnings. Instead of $2 million annual operating income based on 70% occupancy that the authority had claimed in its prospectus to private investors, income predicted in a 1956 study by consultants Booz, Allen and Hamilton was only $1.5 million a year. Furthermore, this was based on 100% occupancy of the 580,000 sq ft of rentable space planned for the structure. With partial occupancy, the consultants foresaw an income of only $365,000 a year.

When State Treasurer Hoffman was asked for his reaction to the lower figure he said he "wouldn't buy the bonds" on that basis. Later, he said he would await the outcome of the litigation before deciding whether the state would buy or not. Another source of income for the convention hall would be a 1% tax on racetrack betting. This, it was estimated, will yield $1.9 million in 1958.

The authority had visions of a hall designed to house a local opera group or ballet, as well as commercial exhibitors. The 52 acre site extending along the city's lakefront, two miles south of the Loop, is part of an area that has seen many successful exhibitions, including the 1933-34 World's Fair.

The authority's bright hopes appear to be headed for disappointment now that the only serious prospective investor, the state, is reconsidering its move. If that were not enough of a blow, the authority has also had to recognize that even with an immediate start the hall could not be built in time for the International Fair to be held in 1959 in conjunction with the opening of the St. Lawrence Seaway.

Governor Okays New York Role in Transit Body

The first small step was taken toward the possible establishment of a $500 million bi-state rail rapid-transit system when New York's Gov. Averill Harriman signed a bill authorizing state participation in a bi-state metropolitan transit district. The bill now must be approved by the New Jersey legislature, then ratified by Congress.

Governor Harriman approved the measure over the objection of Mayor Robert Wagner of New York City who is also chairman of the two-state Metropolitan Regional Council. Mayor Wagner urged that the transit district proposal be given more study.

The bill provides that the district consist of 13 counties—Manhattan, Orange and Rockland in New York State and the remainder in New Jersey.

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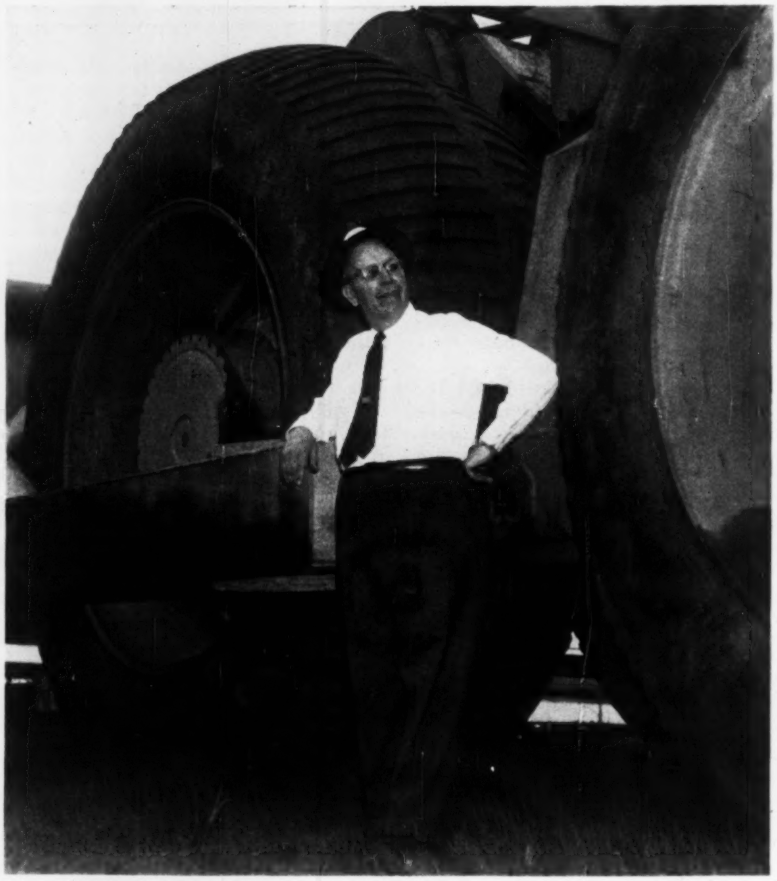

R. G. LeTOURNEAU, head of the company bearing his name, is back in the earthmoving machinery business today. An electric wheel, developed by the company, will be used on new equipment to be made by the company.

LeTourneau Exile Ends Today

R. G. LeTourneau, Inc., of Longview, Tex., eliminated five years ago from the manufacture and sale of earthmoving equipment following the purchase of that business by Westinghouse Air Brake Co., today is back in the field.

However, Robert G. LeTourneau, president, emphasizes that, of necessity, the company's re-entry into the earthmoving machinery business will be a gradual one. "Only the planning and thinking will begin on May 1," he explains.

Mr. LeTourneau said that to talk in any detail on the machines or their prices at this point "would be the wildest sort of guessing." But he willingly started to "guess" and added that some of the company's logging machines or off-road haulers probably will be the basis for new machines. There is a possibility that the company will bring into the market a 25 or 30 ton scraper in the $40,000 to $50,000 price range and another with three times that tonnage capacity priced in the $100,000 class.

• **Removed from earthmoving**—In May 1953, LeTourneau's earthmoving business was sold for approximately $31 million to Westinghouse Air Brake Co., which then established a new subsidiary known as LeTourneau-Westinghouse Co. The sales agreement carried the stipulation that the original LeTourneau company get out of, and remain out of the earthmoving equipment business for five years.

But the company initiated the development of huge machines for off-road hauling, jungle clearing, logging and offshore oil drilling.

• **Enter the electric wheel**—It was during this five year period of enforced absence from earthmoving that the electric wheel power system was born and used in its non-earthmoving equipment.

This system will be used on the company's new earthmoving machines. It consists of powerful electric motors geared directly to the centers of every wheel of a machine and to all other points on a machine where power is required. The motors are operated off a generator driven by a diesel engine. This method eliminates mechanical linkage and driving gear.

Corps at Omaha to Let $200 Million by June

Moving quickly to get construction jobs under contract in compliance with Administration anti-recession efforts, the Missouri River Division of the Corps of Engineers at Omaha has scheduled awards of more than $200 million worth of river development and military construction work between January 1 and June 30.

Major Gen. G. E. Galloay, the Division Engineer said that the program of contract scheduling represents a record for any similar period since World War II. Contract awards for military construction are estimated to total $114 million for the period. Civil works awards are expected to total $90 million. April, May and June are expected to see $32.5, $31.7 and $70.2 million of awards, respectively.

Topping military dollar volume is the new Air Force inter-continental ballistic missile project at Cheyenne, Wyo., with $23.4 million of contracts scheduled. It will be the first operational ICBM launching installation in the nation.

A big share of the civil works awards will be for Oahe Dam near Pierre, S. D., with $19 million expected by June and another $40 million contract for tunnel work scheduled in August.

Maine Building Agency Sets 1% Insurance Rate

Maine's Industrial Building Authority set at 1% its premium charge on insurance for loans granted for industrial construction.

The agency will insure loans granted to local or regional nonprofit industrial development corporations for the construction of new industrial buildings. Under the plan, the corporation builds the facilities for private business which occupies the plant under a straight lease or a lease-purchase agreement.

The legislature established MIBA last year (ENR Oct. 3, 1957, p. 102) to attract new industry to the state.

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NAME________ TITLE________

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Labor

More Financial Aid for Injured Workers?

AFL-CIO and Administration urge compensation reforms, disagree on extent of federal intervention

Even before the problem of improving state jobless insurance benefits now before Congress has been settled, the question of further federal participation in another labor field has been raised. This time it's in the area of workmen's compensation, which is closely tied to accident prevention and to business costs.

At a workmen's compensation conference held last month in Washington, D. C., the AFL-CIO promised to launch a major drive next year to improve the compulsory insurance systems set up by the states to protect workers injured in the course of their employment.

The labor federation favors enactment of a federal workmen's compensation act and failing that, it seeks federal legislation fixing minimum standards to which the states must conform. The Administration, on the other hand, is opposed to federalization of the system and, as in the case of unemployment insurance, would leave corrective legislation up to state initiative.

• Construction—Question is of particular significance to the construction industry in which on-the-job accidents take a heavy toll. Number of disabling injuries has been hitting 218,000 a year.

In New Jersey alone, for example, seven construction workers were killed and 328 were injured in March.

On a national scale, the situation for the industry last year, as estimated by the U. S. Department of Labor, was this: 2,600 killed; 6,100 permanently disabled; 209,300 temporarily disabled.

The AFL-CIO Building and Construction Trades Department, which has urged that more safety promotion be undertaken voluntarily and at the local level, has estimated that construction worker accidents cost contractors about $562 million in 1955, a year in which it put the total of disabling injuries at 210,000. Of this amount, $112 million was represented by direct costs (largely for medical services and premium expense for compensation insurance) and $450 million by indirect costs (such as loss of working time, repairs to damaged equipment, delays in construction schedules, loss of contracts because of an unfavorable bidding position stemming from high compensation insurance rates). Loss of income to construction workers was put at $250 million.

Result has been a steadily increasing emphasis on accident prevention by international and local building trades unions, by contractors and contractor associations and by federal, state and local agencies.

But regardless of the success of present and future safety programs, the question of compensation to injured workers remains.

• Criticisms—What are some of the problems?

In attempting to focus public attention on the need for improvements in the present system, the AFL-CIO has criticized existing state laws in these respects:

- Roughly one-third of the labor force is not covered and not protected.
- Weekly benefit payments to the temporarily disabled—now slightly more than one-third the factory workers' average weekly wage—fall far short of the two-thirds ratio sought by the AFL-CIO.
- Only one of the states has eliminated the waiting period for benefits, leaving little or no protection to workers incapacitated for a few days only.
- Benefits for medical service, for partial and total disability and for death, as well as benefit allowances for dependents, vary widely among the states.
- Enforcement of the laws with respect to safety is inadequate.
- Too much of the compensation insurance premium dollar—now about 40 cents—goes to insurance companies; too much of the workers' benefits are diverted to lawyers because of red tape and legal contests; net left for the worker is unnecessarily small.
- Not enough emphasis is placed on rehabilitation of injured workers.
- Benefits to the permanently disabled are being eroded by inflation.

• Proposals—The AFL-CIO has called upon its state central bodies and its national and international unions to seek corrective legislation at both the state

Construction Wage Gains Top All Others

Wage increases won by building trades unions during the first quarter of this year far outstripped those won by unions in other industries.

A Bureau of National Affairs survey of 37 new contracts in the construction industry shows that 70% provide for hourly wage boosts of 15 cents or more with another 19% in the 13 to 15 cent range. For all industry (based on 712 first quarter contracts) only 14% of the agreements granted wage increases of 15 cents or more and only 9% provided for pay boosts in the 13 to 15 cent bracket.

Since the end of the first quarter, newly negotiated labor contracts in the construction industry have been matching the earlier pace. Here are some wage increases that have been granted in the last two weeks:

• Bricklayers—A new **one-year** contract in New Haven, Conn., grants a **15 cent** pay boost and, commencing next April a 15 cent pension fund contribution. In New Haven, a **one-year** contract provides for a **10 cent** increase **plus** a **15 cent pension** fund contribution beginning in October.

• Electrical workers—Union members in 19 Kentucky and seven Indiana counties have won a **30 cent** wage boost in a **two-year** contract—10 cents now, 10 cents January 1 and 10 cents in September, 1959. In Western New York, 1,000 electrical workers settled for a **15 cent** boost now and another **5 cents** November 1 in a one-year pact.

• Laborers—A **one-year** contract in New Haven grants a **15 cent wage** increase, and a **two-year** agreement in Springfield, Mass., adds **10 cents** more to wages now and another **5 cents** September 1 with a provision for reopening wages on April 1.

• Pipefitters, plumbers—Pipefitters in Chicago have won a **20 cent wage** increase effective June 2, and plumbers in New Haven, a **15 cent** boost in **one-year** contracts.

• Sheet metal workers — Some 4,000 union members in Cook and Lake Counties, Ill., have settled for a **20 cent** wage increase, effective June 1.

and federal levels. Big push will be next year.

Labor Secretary Mitchell, who appeared before the conference, agreed with much of the labor criticism but disagreed with labor's approach to the problem.

"We have always been opposed to federalization of this program," he said, and then issued this warning to the states: "There is an unwritten law that seems to govern our federal-state system which in effect says that to the extent the states neglect their responsibilities in any area, the responsibility of the federal government in that area increases proportionately."

To avoid the necessity of federal action, he urged the states to achieve these objectives in their workmen's compensation systems on their own initiative:

- Full coverage regardless of type and number of employees.
- Maximum weekly cash benefits of not less than two-thirds of average gross weekly wages.
- A waiting period of not more than three days with retroactive payment to date of injury, if disability continues for 14 days.
- Payment of total disability payments for life.

Serious consideration should also be given, Secretary Mitchell said, to second injury funds, to more protection for widows and to full coverage of occupational diseases, particularly those stemming from radiation.

A Voluntary Curb

Several unions act to improve productivity and to spur employment

By last week, top AFL-CIO labor leaders in the building trades and several local unions had the jump on Vice President Richard Nixon when he told the nation that labor must balance its desire for higher wages with its work practices and need for jobs.

Mindful of the effects collective bargaining may have on future job opportunities, three laborers locals in southern Illinois have incorporated into their labor contracts a construction union code to eliminate wasteful work practices. And in Chicago, the lathers union has signed a new two-year labor contract without a wage increase.

The Illinois laborers—Local 1320 in Metropolis, Local 227 in Carbondale and Local 1230 in Rosiclare—have adopted in toto as part of their labor

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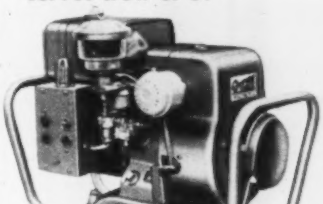

Model 205AJ-1P, most popular Onan unit with residential contractors. Complete as shown with 4 plug-ins, pilot light, carrying frame, recoil starter . . . ready to run. Dolly-mounted model also available.

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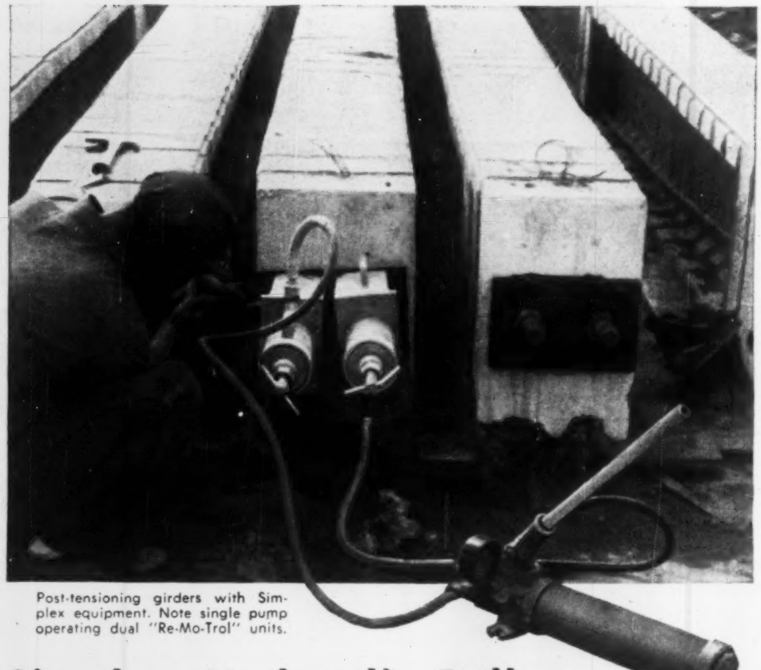


Post-tensioning girders with Simplex equipment. Note single pump operating dual "Re-Mo-Trol" units.

Simplex Hydraulic Pullers Provide Greater Efficiency in Concrete Prestressing Operations

Construction Men Acclaim Ease and Safety of Simplex Methods

Pre-tensioning and post-tensioning concrete becomes a quick, easy task with Simplex hydraulic equipment. Because of the "center-hole" pulling feature of Simplex units, wires, rods and cables can be tensioned without torque, "off center" pressures or complicated back-up devices. Eliminating these factors accounts for a 75% increase in ease and efficiency.

Simplex "Re-Mo-Trol" units consist of a "center-hole" hydraulic pulling ram connected by high pressure hose to a hand, air, electric or gasoline operated hydraulic pump. This powerful combination permits uniform stressing with maximum operator safety and speed. Once the ram is in place, the pump can be actuated safely from any nearby, convenient location.

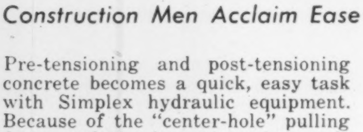
"Re-Mo-Trol" hydraulic pullers are ideally suited to prestressing operations at the job site and for use in permanent pre-tensioning beds. These versatile Simplex units are available in standard capacities from 10 to 100 tons, and can be used for heavy tonnage high-pressure tensioning of cables, rods or wires or for pushing or pulling against a holding bracket in multiple bed stressing operations.

The standard Simplex units provide a range of capacities sufficient for most applications. However, custom-built units are available up to 600 ton capacity.

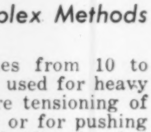
Another Simplex hydraulic puller, the "Jenny", is a self-contained unit which serves as its own back-up or can be used with a simple chair to reduce set-up time.

Either device can be used not only as a puller but as a hydraulic jack or press for moving heavy equipment and the like.

For detailed data on the selection and application of Simplex Pullers for prestressing concrete and other construction jobs, write for your copy of our new bulletin: "Hydraulic 56".



SIMPLEX "RE-MO-TROL"—Remote-Controlled Unit has ram connected to hydraulic pump by high pressure hose for safe, convenient use in tight spots and dangerous locations. A pressure gauge may be installed for checking tensioning pressure.



SIMPLEX "JENNY" is a hydraulically operated center-hole puller which also serves as a press or heavy duty jack. It is a self-contained unit available in capacities from 30 to 100 tons.

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agreements what is commonly known as the building trades' "Ten Commandments." That is a 10-point statement of policy adopted by the general presidents of the AFL-CIO international building trades unions in Miami last February (ENR Feb. 13, p. 41).

The statement, which has been vigorously promoted by building trades' President Richard Gray, who had earlier recommended a general wage freeze, is aimed at higher productivity and lower building costs. In the words of J. H. Lyons, president of the ironworkers union, it "is intended to meet the threat of increased unemployment, combat the employment of nonunion construction workers and foster and promote the employment of construction workers" in unions affiliated with the AFL-CIO Building and Construction Trades Department.

The wage freeze volunteered by lathers Local 74 in Chicago is aimed at similar goals. Unemployment is reportedly the local's primary concern. The union also hopes a status quo in wages will give its members a competitive advantage over other crafts and materials.

It was along these lines that Mr. Nixon in a New York address last Thursday warned labor leaders of their responsibility in the present recession. Conceding the legitimacy of higher wages as a proper union goal, he said that a combination of high wages and low productivity can price many products out of the market and workers "out of a job."

Secondary Boycotts

Homebuilders say labor strife would result if Congress grows lenient

The National Association of Home Builders is seeking support from members of the homebuilding industry to block any federal legislation that would weaken the secondary boycott provisions of the Taft-Hartley Act as they apply to the construction industry.

In a legislative report to the field, NAHB has urged its local and state affiliates to make their views on secondary boycotts known to their Congressional representatives and to members of the House and Senate Labor Committees. The object is to postpone indefinitely any action on an Administration recommendation that construction sites be exempted from the boycott ban.

Present restrictions on secondary boycotts seek to protect innocent or neutral employers and the public from harmful effects of labor disputes not of their own making.

The Eisenhower Administration has taken the position that the nature of the construction industry is such that no employer at a common construction site is a neutral one. For example, when a union general contractor puts a nonunion sub on a union job, neither one is in a neutral position if union workers protest the presence of nonunion workers who threaten their wage scales and working conditions.

The building trades unions have long taken this position and have repeatedly requested—as has the Administration—that Congress exempt construction site activity from the boycott ban. (NAHB notes that the industry's recent Construction Advisory Committee on Taft-Hartley Revisions made no recommendation to weaken the boycott provisions.)

NAHB suggests that the proposal, if adopted, would lead to a strike-filled period of unstable labor relations. It predicts that in union areas, the proposal would permit any one trade to shut down an entire job. In open shop areas, according to NAHB, the proposal would "undoubtedly" lead to an intensive organizational campaign in which the secondary boycott would be used in an effort to force an employer to coerce his employees into joining a union.

Plumbing Industry Seeks Curb on Work Stoppages

Management and labor in the plumbing and pipefitting industry are being urged to use the services of the Industrial Relations Council of the industry for the settlement of disputes unresolved at the local level. Aim is to discourage strikes, lockouts and other stoppages.

The council is offering its services for the settlement of disputes and is urging that clauses be inserted in local collective bargaining agreements calling for the voluntary submission of all except jurisdictional disputes to the council after the facilities of local settlement machinery have been exhausted.

The proposal has been endorsed by the presidents of the United Association (plumbers and pipefitters union), the National Association of Plumbing Contractors and the Mechanical Contractors Association.

In announcing the action, the council pointed out that strikes and work stoppages "always prove costly and detrimental not only to employers but to the journeymen of the United Association as well."

OFFICIAL PROPOSALS

APPEAR HERE EACH THURSDAY. PROPOSAL ADVERTISEMENTS ACCEPTED UP TO 10:30 A.M. FRIDAY FOR THE ISSUE DATED THE FOLLOWING THURSDAY.

Bids: June 6, 1958

Settling Basins and Outlet Control Substructure City of Chicago

FOR THE CENTRAL DISTRICT
FILTRATION PLANT
SPECIFICATIONS AND CONTRACT
DOCUMENTS NO. 80,391-58-1
DEPARTMENT OF PURCHASES,
CONTRACTS AND SUPPLIES

Chicago, May 1, 1958

SEALED PROPOSALS endorsed "Proposal for the Construction of Settling Basins and Outlet Control Substructure for the Central District Filtration Plant" will be received by the City of Chicago until 11:00 A.M., C.D.S.T., Friday, June 6, 1958, at Room 401, City Hall, Chicago, Illinois, at which time and place all such proposals will be opened publicly and read aloud.

The work includes constructing the reinforced concrete structures, consisting of settling basins, mixing basins and the outlet control substructure, excavation and grading, furnishing timber piles, driving timber piles; furnishing and placing sleeves, thimbles, frames, covers, gratings and stair treads; furnishing and installing sluice gates, butterfly valves, together with all other work appurtenant and collateral thereto, as shown on the Plans and Detail Specifications. This work is located within a cofferdam, north of Navy Pier and east of Lake Shore Drive, Chicago, Illinois.

The Contract Documents are on file and available to bidders at the office of the Department of Purchases, Contracts and Supplies, Room 401, City Hall, Chicago, Illinois. Copies of the Contract Documents may be obtained by depositing one hundred dollars ($100.00), in cash, or certified check, with said Department of Purchases, Contracts and Supplies for each set of documents. The amount of the deposit will be refunded upon the return of said documents in good condition within ten (10) calendar days after the opening of bids. Checks to be made payable to the City of Chicago.

Proposals must be made upon blank forms of proposal contained in the Contract Documents and be addressed to said Department of Purchases, Contracts and Supplies and be accompanied by a proposal guaranty in cash, cashier's check, certified check or Comptroller's Certificate of money owed the bidder, in the amount of four hundred thousand dollars ($400,000.00). Checks shall be made out to the City of Chicago and drawn on some responsible bank doing business in the United States.

The Purchasing Agent reserves the right to reject any or all proposals and to disregard any informalities in the proposals and bidding.

JOHN F. WARD,
PURCHASING AGENT

Bids: May 15, 1958

Power Authority of the State of New York Niagara Power Project

ADVERTISEMENT FOR PROPOSALS
FOR
THE FURNISHING AND DELIVERY
OF
MOTOR/GENERATOR MAIN LEADS—
ISOLATED PHASE BUS
FOR
TUSCARORA POWER PLANT
SPECIFICATIONS NO. PA-N-25011
NIAGARA CONTRACT NO. NP14

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the furnishing and delivery thereof f.o.b. Tuscarora Power Plant Area, University Siding, New York, of generator main leads—isolated phase bus for the Tuscarora Power Plant in Lewiston, Niagara County, New York, until 11:30 A.M. Eastern Daylight Saving Time on the 15th day of May, 1958, at the Authority's Office, 18th Floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York, at which time and place proposals will be publicly opened and read aloud.

Bids will be received for 4 sets of 15 kv isolated phase bus and associated equipment in accordance with the bidding schedule.

Delivery of the equipment will be required beginning on or before September 1, 1960.

Plans, Specifications and Proposal Forms for the work, may be obtained from the Power Authority of the State of New York, at 18th Floor the Coliseum Tower, 10 Columbus Circle, New York 19, New York upon application and prepayment of a fee of Ten Dollars ($10.00) per initial set of contract documents, and Five Dollars ($5.00) per set for additional sets, no part of which will be refunded. Plans, Specifications and Proposal Forms for the work will be on file in the Authority's Office and in the offices of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and may be inspected by prospective bidders during office hours.

Bids must be made and returned in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee will be required with each bid in an amount not less than 20 percent of the gross sum bid.

The right is reserved to reject any or all bids.

W. S. CHAPIN
GENERAL MANAGER

Bids: May 27, 1958

Contract NA-480.001

THE PORT OF NEW YORK AUTHORITY
NEWARK AIRPORT
BUILDINGS NOS. 150, 151, 152 and 153
PAVING AND UTILITIES

Sealed proposals for the construction of paving and the furnishing and installation of utilities for Buildings Nos. 150, 151, 152 and 153 to be constructed at Newark Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, May 27, 1958, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the Office of the Engineer of Design of the Authority, Room 1115. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt will be issued. The receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman
New York, May 1, 1958

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-5045) will be received at Manila, Utah until 2:30 p.m. Mountain Standard Time, June 10, 1958, for furnishing labor and materials for Flaming Gorge Dam and Powerplant, Utah-Wyoming, Colorado River Storage Project. Location approximately 45 miles north of Vernal, Utah in Daggett County. Principal items are 400,000 cu. yds. excavation; 961,000 cu. yds. concrete; 850,000 pounds structural steel for powerplant; and other work. Completion time 1,825 days. For particulars, address Bureau of Reclamation, Vernal, Utah; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

Bids: May 15, 1958.

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.,—Pursuant to the provisions of the Highway Law, Canal Law and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 15th day of May 1958, by Henry A. Cohen, Director Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following Projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1, G. L. NICKERSON, District Engineer, 353 Broadway, Albany 1, New York						
Albany	FISH 58-3	Interstate Route 502, Sect. 2, Cont. 1 (Latham to Mohawk River) Project I-1119(16)	3.04 (3.70 Acc.)	9" Cement Concrete Pavt.=2.90 Mile; Asphalt Concrete=0.11 Mile; Misc. Work=0.03 Mi. including 4 Hwy. Gr. Sep.-Comp. Beams 234.5', 231', 131.5'; 135.5' Pier Footings for Future H.G.S.	$230,000 Plans $10	$4,199,000
Essex (Rtes. 8, 9N, 22)	RC 58-36	Ticonderoga-Crown Point, Pt. 1, S.H. 891 Ticonderoga-Crown Point, Pt. 2, S.H. 1176 Crown Point-Port Henry, S.H. 841	14.42	Asphalt concrete	$30,000 Plans $2	$540,000
Essex (Rte. 28N)	FARC 58-30	Aiden Lair-Newcomb, Pt. 2, S.H. 756 Newcomb-Long Lake, Pt. 1, S.H. 5188 Project S-210(3)	9.49	Asphalt Concrete=9.49 Mi. Including Br. No. 1; Prestressed Conc. Beam 3 Spans 70' Ea. Br. No. 2, Reinf. Conc. Closed Box 25.5'	$115,000 Plans $10	$2,104,000
Rensselaer	FASS 58-6	West Sand Lake-Poestenkill-Cropseyville, Pt. 3 (County Road). Project S-486(2)	0.43	Asphalt Conc.=0.39 Mi.; Misc. Work=0.04 Mi. Incl. Br. No. 1 Pres. Conc. 2 Spans 49.8' Ea.	$12,000 Plans $2	$204,000
DISTRICT No. 2, L. KETCHUM, District Engineer, 109 No. Genesee Street, Utica, 1, New York						
Oneida (Rte. 69)	FARC 58-31	Whitesboro-Yorkville, Pt. 1, S.H. 8510 Project F-693(5)	1.92	Asph. Conc. Ty. 1A=0.53 Mi.; Widen & Resurface=1.39 Mi. Including Conc. Slab Br. 3 Spans, 22' Ea.	$56,000 Plans $3	$1,030,000
Herkimer, Madison & Oneida (Rtes. 5, 20, 12)	RC 58-22	Seven Various Highways in District No. 2	18.68	Subsealing Cement Concrete Pavt.	$18,000 Plans $2	$331,000
DISTRICT No. 3, E. E. TOWLSON, Acting District Engineer, 333 E. Washing St., Syracuse, New York						
Oswego	M 58-6	Oswego Grain Elevator and Terminal City of Oswego	....	Asph. Conc. Access Road	$450 Plans $10	$8,300
Tompkins	FAC 58-3	City of Ithaca Arterial: Meadow St., Seneca St.; Green St. Project U-427(9)	1.35	Asph. Conc. Type 2A	$38,000 Plans $3	$680,000
Wayne (Rte. 21)	FARC 58-23	Marion-Williamson, Pt. 2, S.H. 1406 Project F-1140(1)	0.35	Asph. Conc. Type 1A=0.31 Mi. Misc. Work=0.04 Mi.	$5,000 Plans $2	$86,600
Wayne (Rte. 14)	FARC 58-25	Lyons-Sodus Point, Pts. 2 & 3, S.H. 1060 Project F-1145(1)	0.54 (0.12 Acc.)	Asph. Conc. Type 1A=0.50 Mi. Misc. Work=0.04 Mi.	$10,000 Plans $2	$182,000
DISTRICT No. 4, B. F. PERRY, District Engineer, Barge Canal Terminal, Rochester 1, New York						
Livingston & Ontario (Rte. 5 & 20)	FARC 58-29	Lima-East Bloomfield, Pt. 1, S.H. 5142 Lima-East Bloomfield, Pt. 2, S.H. 5041 Project F-343(14)	0.47	Asph. Conc.=0.45 Mi.; Misc. Work=0.02 Mi. Including Br. No. 1, Prestressed Conc. 2 Spans 70.2' Ea.	$28,000 Plans $2	$520,000
Monroe	FAC 58-6	Rochester City: Inner Loop (Front St. to North St.) Project U-1089(8)	0.63	Demolition	$12,000 Plans $2	$206,000
DISTRICT No. 6, J. H. THOMAS, District Engineer, State Office Bldg., 30 West Main Street, Hornell, New York						
Schuyler	FASS 58-12	Montour Falls-Townsend, C.R. No. 398 Project S-446(1)	1.60	Top Course Bit. Mac. Type 1	$16,000 Plans $2	$293,000
Steuben (Rte. 21)	FAC 58-4	Hornell City: West Main St. Project F-589(5)	0.31	Asph. Conc.=0.31 Mi. Including Viaduct & Br. Repair Truss & Girders 840' Total Span	$30,000 Plans $3	$547,000
DISTRICT No. 7, Robert W. Sweet, District Engineer, 444 Van Duzee Street, Watertown, New York						
St. Lawrence (Rte. 56, 56A)	FARC 58-32	Norwood-Norfolk, S.H. 967 Norfolk-Raymondville, S.H. 1587 Project S-507(1)	0.29	9" Cem. Conc. Pavt.=0.24 Mi.; Misc. Work=0.05 Mi. Including Br. No. 1, Comp. I-Beam, 3 Spans, 240' Total Br. No. 2, I-Beam, Single Span 64'	$18,000 Plans $3	$328,000
St. Lawrence (Rte. 37C)	FARC 58-26	Massena-Helena, Pt. 2, S.H. 1265 Project S-367(2)	1.35	Asph. Conc.=1.32 Mi.; Misc. Work=0.03 Mi. Including Br. No. 1, Prestressed Conc. 4 Spans 75' Ea.	$30,000 Plans $3	$523,000
DISTRICT No. 8, K. G. RAUER, District Engineer, Pleasant Valley Road, Poughkeepsie, New York						
Putnam (Rte. 6)	FGRC 58-24	Brewster-Carmel, S.H. 909 Project FG-590(3)	0.14	9" Cem. Conc. Pavt.=0.14 Mi. Including R.R.G.S. (NYC RR) Plate Girder Single Span 103.6'	$19,000 Plans $2	$349,000
Ulster (Rte. 299)	FARC 58-33	Highland-New Paltz, S.H. 1536 Project F-1109(1)	5.10	9" Cem. Conc. Pavt.=4.84 Mi.; Asph. Conc.=0.26 Mi. Including Br. No. 1 Composite W.F. Beam 85' Span	$120,000 Plans $5	$2,152,000
DISTRICT No. 9, J. C. FEDERICK, District Engineer, 71 Frederick Street, Binghamton, New York						
Schoharie (Rte. 30)	FARC 58-34	Grand Gorge-Breakabeen, Pt. 4, S.H. 8070 Middleburg-Breakabeen, S.H. 5577 Project S-459(3)	0.78 (0.06 Acc.)	Asph. Conc.=0.78 Mi. Including Br. No. 2, Prestressed Conc. Single Span 72'	$20,000 Plans $2	$346,000
DISTRICT No. 10, M. E. Goul, District Engineer, 325 W. Main Street, Babylon, L. I., New York						
Nassau	LP 58-1	Loop Parkway (Lido Blvd. at Long Beach to Meadowbrook State Parkway)	3.00 (0.17 Acc.)	Asph. Conc.=2.63 Mi. Misc. Work=0.37 Mi.	$40,000 Plans $3	$696,000
Suffolk (Rte. 27A)	FARC 58-27	Bayshore-Brookhaven Town Line, S.H. 5301 Project S-442(2)	0.97	Asph. Conc.=0.86 Mi. Misc. Work=0.11 Mi.	$29,000 Plans $2	$511,000

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage) Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Instructions to Bidders".

The right is reserved to reject any or all bids.

JOHN W. JOHNSON

SUPT. OF PUBLIC WORKS

Bids: May 27, 1958

Contract GWB-190.040

THE PORT OF NEW YORK AUTHORITY
GEORGE WASHINGTON BRIDGE
LOWER LEVEL EXPANSION
SUSPENDED STRUCTURES

Sealed proposals for the purchase and erection of structural steel and related items for the suspended steel structures for the lower level expansion of the George Washington Bridge will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, May 27, 1958, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1115. Documents will be furnished upon deposit of $50.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $50.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt will be issued. The receipt shall be delivered to Room 1115, where the documents will be furnished.

Bidders' attention is called to the qualification requirements contained in the "Information for Bidders" section of the contract booklet.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, May 1, 1958

OFFICIAL PROPOSALS

Bids: June 15, 1958.

Power Authority of the State of New York

ADVANCE NOTICE
CHANNEL IMPROVEMENT FOR BARNHART ISLAND POWER PLANT TAILRACE
SPECIFICATIONS NO. PA-5-11038
ST. LAWRENCE CONTRACT NO. 47

The Power Authority of the State of New York will advertise for bids and will have plans, specifications, and proposal forms available for issuance to prospective bidders on or about May 15, 1958, for Channel Improvement for Barnhart Island Power Plant Tailrace, St. Lawrence Contract No. 47. Bids on this contract will be opened on or about June 15, 1958.

The work will consist principally of the excavation of approximately 3,000,000 cubic yards of material in an area of the St. Lawrence River channel approximately 1,300 feet wide by 3,000 feet long. The upstream end of the proposed channel excavation to be included in Contract No. 47 will be approximately 1,500 feet downstream from Barnhart Island Power Plant and the northern limit of excavation will be approximately along the International Boundary, near the center of the river channel. The disposal area for the excavated material will be on the American mainland adjacent to the excavation area. Construction and removal of a perimeter cofferdam to enclose the area to be excavated so that excavation can be performed with land-based equipment will be included in the contract.

The tentative completion date for the date for the excavation and for the major portion of the cofferdam removal is December 31, 1959.

Following issuance of the plans, specifications, and proposal forms, copies thereof may be obtained from the Power Authority of the State of New York upon application and payment of a fee in an amount to be stated in the advertisement to be issued for this work, and will be available for inspection by prospective bidders in the Authority's office, 18th Floor, the Coliseum Tower, 10 Columbus Circle, New York 19, N. Y., in the offices of the Engineer, Uhl, Hall and Rich, 230 Congress Street, Boston 10, Mass., and in the offices of the Hydro Electric Power Commission of Ontario, 620 University Ave., Toronto 2, Ontario.

Prospective bidders on the work described in this advance notice may obtain a drawing showing underwater topography of the river channel and topography of the adjacent mainland from the field office of the Engineer, Uhl, Hall and Rich, P. O. Box 68, Massena, N. Y., upon application and payment of $1.00 per print. No information on the proposed channel improvement work except the topographic drawing and the information given in this notice will be furnished to prospective bidders in advance of the issuance of the specifications.

The information contained in this Advance Notice is subject to change without notice. This Advance Notice and the drawing mentioned above are not to be considered as constituting parts of the contract documents for St. Lawrence Contract No. 47.

W. S. CHAPIN
GENERAL MANAGER

Bids: May 27, 1958

Contract NA-470.001

THE PORT OF NEW YORK AUTHORITY
NEWARK AIRPORT
CONTROL TOWER
PAVING AND UTILITIES

Sealed proposals for the construction of paving and the furnishing and installation of utilities for the new Control Tower at Newark Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, May 27, 1958, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1115. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt will be issued. The receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman
New York, May 1, 1958

Bids: May 15, 1958

Power Authority of the State of New York

ADVERTISEMENT FOR PROPOSALS FOR THE
CONSTRUCTION OF THE REYNOLDS SUBSTATION
NEAR ROOSEVELTOWN
ST. LAWRENCE COUNTY, NEW YORK
SPECIFICATION NO. PA-8-25
CONTRACT NO. T10

NOTICE TO CONTRACTORS: THE POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the construction of the Reynolds Substation near Rooseveltown, New York, until 10:30 A.M. Eastern Daylight Saving Time on the 15th day of May 1958, at the Authority's office, 18th Floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York, at which time and place proposals will be publicly opened and read aloud.

The work includes but is not limited to the installation of the following Authority furnished equipment consisting of structural aluminum members for the substation, transformers, power circuit breakers, disconnecting switches, lightning arresters, insulator assemblies and bus supports.

The work also includes but is not limited to the furnishing and installation of all foundations required by the work of the contract, the installation of two (2) aluminum transmission structures, the installation of the 13.8 kv transmission line from Reynolds Substation to a point on first wood pole structure of General Motors line and the installation and connection of the 115 kv transmission line from the terminal structures of Reynolds Power Supply line to the Reynolds Substation, all in accordance with the requirements of these specifications.

The work shall be completed on or before February 1, 1959.

Plans, Specifications and Proposal Forms may be obtained only from the Power Authority of the State of New York, at The Coliseum Tower, 10 Columbus Circle, New York 19, New York, upon application and prepayment of a fee of ten ($10.00) dollars for initial set of Contract Documents and five ($5.00) dollars for each additional set, no part of which will be refunded. Plans, Specifications and Proposal Forms for the work will be on file in the Authority's office and in the office of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, for the inspection by prospective bidders.

Bids must be made in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee will be required with each bid in an amount not less than twenty (20) percent of the gross sum bid.

The right is reserved to reject any or all bids.

W. S. CHAPIN
GENERAL MANAGER

Bids: May 22, 1958

New Jersey Turnpike Authority

Contract No. R-21

Proposals are invited for Contract R-21 which involves the construction of two additional toll lanes at Interchange 11, one additional toll lane at Interchange 15 and four additional toll lanes and a small addition to the utility building at Interchange 18 on the New Jersey Turnpike in Middlesex, Essex and Bergen Counties, New Jersey.

The principal items of work include:

Roadway Excavation	9,700 c.y.
4" Top Soiling	7,000 s.y.
Subbase	2,810 c.y.
Macadam Base Course, 7½" & 5" thick	19,125 s.y.
Asphaltic Conc. Pavement, 4½" & 3" thick	18,300 s.y.
Portland Cement Conc. Pavement 6" & 10" thick	875 s.y.
Concrete Curb	4,155 l.f.
Concrete in Structures	383 c.y.
Bldg. Addition—Utility Bldg. Interchange 18	L.S.
Treated Timber Piles	4,300 l.f.
Toll Islands	7 Units

Proposals will be received at the New Jersey Turnpike Authority, Administration Building, New Brunswick, New Jersey, until 11:00 o'clock, Eastern Daylight Saving Time, on the morning of May 22, 1958 at which time and place said proposals will be publicly opened and read.

Each bidder must submit with his Proposal a Contractor's Financial and Equipment Statement on the form furnished by the Authority.

Contract documents may be examined during office hours on or after April 30, 1958 at the office of the Authority and at the office of the Consulting Engineers, Barnett & Herenchak, Inc., 24 Commerce Street, Newark 2, New Jersey. Contract Documents will be furnished upon payment of ten dollars ($10.00) for each set, upon application to the Authority.

Contract Documents are not required to be returned and the payment will not be refunded.

NEW JERSEY TURNPIKE AUTHORITY
Joseph Morecraft, Jr., Chairman
April 23, 1958

Bids: May 29, 1958

Invitation for Bids

The City of Anchorage invites bids for the construction of a 600 ft. dock and port facility, consisting of a concrete deck on steel piling, railroad trestle and highway approaches, dredging, and two 40-ton and two 5-ton level-luffing cranes, at Anchorage, Alaska. Bids will be received by the City Manager until 2:00 p.m. Alaska Standard Time, May 29, 1958, at which time bids will be publicly opened.

Plans, specifications, and bid documents will be obtainable on or after April 18, 1958 at the office of the City Purchasing Agent, First Avenue and Post Road, (mailing address-Box 400), Anchorage, Alaska, or at the engineering office of Tippetts-Abbett-McCarthy-Stratton, 62 West 47th Street, New York 36, New York. A deposit of $50.00 will be required for documents, of which $25.00 will be refunded provided documents are returned in good condition prior to July 1, 1958.

The City reserves the right to reject any or all bids, and to waive informalities in the bids.

CITY OF ANCHORAGE
By George C. Shannon
City Manager

Prequalification Date: May 8, 1958

Board of Education Bureau of Construction

Notice Re: Prequalification Forms for Contractors

NOTICE IS HEREBY GIVEN THAT The Superintendent of School Buildings, Bureau of Construction, 4th Floor, Room 407, 42-15 Crescent Street, Long Island City 1, N. Y. will receive applications for prequalification from contractors who may wish to submit bids for the proposed hereinafter specified contracts as follows:

General Construction, Plumbing and Drainage, Heating and Ventilating, Electrical Work and Lighting fixtures for the New Public School 46, Brooklyn. Clermont Avenue, Adelphi Street, bw't Myrtle and Park Avenues.

Prequalification application forms will have to be secured from and must be submitted to the Superintendent of School Buildings, Bureau of Construction, 4th Floor, Room 407, 42-15 Crescent Street, Long Island City 1, N. Y.

Bids when advertised, will be received from prequalified bidders only.

Time for submitting prequalification application by contractors will expire on Thursday, May 8, 1958.

WILLIAM H. CORREALE
Superintendent of School Buildings,
Design and Construction
Dated: April 22, 1958

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-5043) will be received at Helena, Montana until May 29, 1958, for furnishing labor and materials for earthwork and structures for initial stage of Spokane Bench Laterals 6.3, 9.2, and 10.1 and North Side Laterals 27.8 and 32.6, Missouri River Basin Project, Montana. Location near Helena, Montana. Principal items in two schedules are: 47,300 cu. yds. excavation; 3,100 cu. yds. constructing earth lining; 290 cu. yds. concrete in structures; 1,360 lin. ft. various kinds of pipe; and other work. Completion time 250 days. For particulars, address Bureau of Reclamation, P. O. Box 551, Helena, Montana; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

EMPLOYMENT OPPORTUNITIES

—RATES—

DISPLAYED

The advertising rate is $39.20 per inch for all advertising appearing on other than a contract basis. Frequency rates quoted on request.

An advertising inch is measured 7/8" vertically on a column—3 columns—30 inches to a page.

Subject to Agency Commission.

NATIONAL
COVERAGE

UNDISPLAYED

$2.40 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.

Position Wanted ads take ½ of above rate.

Box Numbers—count as 1 line.

Discount of 10% if full payment is made in advance for 4 consecutive insertions.

Not subject to Agency Commission.

Send NEW Ads and Inquiries to Classified Advertising Division of ENGINEERING NEWS-RECORD
P. O. Box 12, N. Y. 36, N. Y. May 15th issue closes May 5th

SOILS ENGINEER

Challenging opportunity for alert soils engineer to join diversified professional group engaged in photo interpretation studies.

Primary function will be photo identification of soils and related geology and determination of engineering suitability.

Requires C.E. background with specific soils experience and good stereo vision. Highway and foundations design or field geologic investigations preferred.

For immediate consideration write giving details of education and experience.

Aero Service Corp.

210 E. COURTLAND ST. PHILADELPHIA 20, PA.

World Leader in Aerial Mapping and Exploration

YOUNG FOUNDATION ENGINEER

Wanted by manufacturer of tubular steel piles. Experience in pile foundation construction and design desirable. Work involves travel from central headquarters. Position is permanent—offers good opportunity for advancement. Salary commensurate with useful experience. Mail personal and experience record to W. H. Robertson, The Union Metal Manufacturing Co., Canton, Ohio.

WANTED
Marine Construction Superintendent
for Southeast Location

P-7800, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

CIVIL ENGINEER

Young civil engineer interested in broad application of civil engineering.

Excellent opportunity with consulting firm. Liberal benefit plans and good working conditions. Location Middle West.

Send resume of education and experience with salary requirements to:

P-7577, Engineering News-Record
520 No. Michigan Ave., Chicago 11, Ill.

DESIGNERS and DETAILERS

Experienced in the design or detailing of Erection Methods for Bridges and Structures. Write stating age, education and exper. Engineering office located New York City. Reply:

P-7501, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N. Y. 36, N. Y.

*ADDRESS BOX NO. REPLIES TO: Box No.
Classified Adv. Div. of this publicaton.
Send to office nearest you.
NEW YORK 36: P. O. BOX 12
CHICAGO 11: 520 N. Michigan Ave.
SAN FRANCISCO 4: 68 Post St.*

POSITIONS VACANT

Wanted—Field Engineer, Estimator. Excellent opportunity for advancement in well established growing General Contracting firm Poughkeepsie area. Salary open. P-7693, Engineering News-Record.

Wanted — Construction Superintendents — Long established Mid-West General Construction firm has openings for two or more qualified field construction superintendents. Engineering background preferred but not required. Applicants should be aggressive, cost conscious and well grounded in reinforced concrete, structural steel, and masonry structures. Complete education, experience data and salary expected should be furnished in first reply. P-7751, Engineering News-

Superintendent Wanted for road construction. Rieth-Riley Construction Co., Inc., P. O. Box 477, Goshen, Indiana.

Wanted: Good Land Surveyor, good opportunity for right man. Steady work. Inquire by letter or personal appointment Saturday mornings to: Howard Madison, Engineer & Land Surveyor, 40 Hoy Ave., Fords, N. J. (Tel. HI 2-3373).

Resident Engineer, registered engineer with qualifying experience on construction of 1.5 mgd capacity sewage treatment plant and intercepting sewers. Complete resume of experience and education and statement of salary requirement in letter of application. Jones, Henry & Williams, 821 Security Building, Toledo 4, Ohio.

Bridge Designing Engineer, well qualified. Forward resume of education and experience with salary requirements to Macomber & Faber, 1824 N. 4th St., Harrisburg, Pa.

Construction Engineer, C.E., Permanent, New York, Foundation and Heavy Construction. WY 1-2500.

OVERSEAS

Exclusive monthly detailed reports on foreign construction projects. Individual and Company Membership available. Write for details Overseas Americans, Inc., 7 West 44th St., New York 36, N. Y. Dept. O.

POSITIONS VACANT

City Engineer—City of Brookfield (Milwaukee metropolitan area). Graduate civil engineer registered or eligible for immediate registration as a professional engineer in Wisconsin. Previous experience as city engineer preferred. Experience in administration, sanitary systems, storm and surface drainage, road construction desired. Submit experience record, salary desired, date available to: City Clerk, City Hall, 2000 Calhoun Road, Brookfield, Wisconsin.

Equipment—Supervisor N.E. Contractor— year round employment. Excellent opportunity. Must have had similar previous employment. Salary commensurate with ability. P-7870, Engineering News-Record.

EMPLOYMENT SERVICES

Salaried Personnel $5.000-$30.000. This nationwide service successful since 1927 finds openings in your field. Sells your abilities; arranges contacts. Present position protected. Write for details—Jira Thayer Jennings, P.O. Box 674, Manchester, Vermont.

Foreign Employment. Hundreds of challenging opportunities with American Companies overseas. Top-pay positions in your own field. Write to World Employment Service, Box 3831, Los Angeles 54, California.

POSITIONS WANTED

Archt.—Struct. Engr. exp. design, supv., estimating of indust., commer., munic., constr., desires position with archt., engr., constructor. PW-7686, Engineering News-Record.

P.A. If your job size justifies and policy permits Field Purch. Dept. including Subcontracts I offer unimpeachable background ethics & ability. PW-7699, Engineering News-Record.

Architectural estimator and project manager. 7 years experience. Fully qualified in public, industrial and commercial building construction. Presently located in Florida. PW-7847, Engineering News-Record.

(Continued on page 90)

CONSTRUCTION MANAGER AVAILABLE

20 years experience in building construction. Can take complete charge of all operations. Have proven record with good references. Foreign and domestic experience. Would be well qualified to manage branch office in SW USA for large construction firm. Presently employed but can be available in reasonable length of time. Can be available for personal interview.

PW-7711, Engineering News-Record
68 Post St., San Francisco 4, Calif.

ESTIMATOR

The young man we are looking for has had several years experience estimating for general contractors engaged in competitive building construction. He is ready or nearly ready to take over the job of chief estimator.

We have an exceptional opportunity to offer this man. We presently operate on a nationwide basis, but plan to expand our operations especially throughout the mid and far western states. We can offer a key position in this expansion program and an opportunity to grow with a growing company.

Write full details covering experience, education, references, salary and personal data.

Blount Brothers Construction Company
P. O. Box 949 Montgomery, Alabama

ENGINEERS AND MANAGERS

General contractor will add to expanding organization, men qualified for large projects overseas and domestic, experienced in supervision of construction, maintenance and operation of military installations.

This will include men with professional engineering and management experience in airports, power, water, sewage, structures, pavement and grounds, construction and administrative type vehicles, fire and crash rescue and food service operations.

Experience in the Airforce installation engineering field or Army post engineering field, and military vehicle administration or military mess operation are desirable.

In reply include education, age, experience, salary requirement, and state overseas area willing to relocate in your resume. The completeness of your resume will qualify you for an interview. All replies to be held in strict confidence.

P-7709, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

ENGINEERS

There's Opportunity on Beautiful Gulf Coast

Highway Design Engineers
Bridge Design Engineers

Openings available in senior, intermediate, and junior grades. Permanent positions for competent adaptable men. Ideal working conditions in our own new modern air-conditioned building. Unsurpassed company-paid hospitalization, life insurance and retirement plans.

Excellent opportunity for professional experience and advancement. 40-hour week. Liberal salaries. Send complete resume of education and experience, with salary requirements to:

PALMER & BAKER
Engineers, Inc.
P. O. Box 346 Mobile, Ala.

EXPERIENCED HYDRAULICS ENGINEER WANTED

Graduate engineer experienced in paper mill hydraulics, planning and development of piping layout systems, etc. for large expanding and progressive mill in Maryland. Good salary, all benefits and excellent opportunity for advancement. Send detailed resume of experience and education to

Director of Personnel
West Virginia Pulp & Paper Company
Luke, Maryland

ENGINEERS

Foreign Employment

MAINTENANCE, SCHEDULING & PROGRAMMING

Career opportunities for graduate engineers with minimum 6 years experience supervising maintenance engineering functions in oil refining or producing facilities, power plants, heavy industrial installations and supporting community facilities. For work in Saudi Arabia as Staff Engineers. Also opportunity for engineers with production control experience.

High salary plus liberal all-inclusive benefits conducive to large savings. Excellent community facilities.

Write outlining background and experience. Please include telephone number.

Recruiting Supervisor, Box 215

ARABIAN AMERICAN
OIL COMPANY
505 PARK AVENUE
NEW YORK 22, NEW YORK

ASSISTANT TRAFFIC ENGINEER

$597 to $776 a month, including annual automatic and longevity salary increases. **Starting salary** may be at any step in basic range ($597 to $712) depending upon qualifications. Interview and moving expenses paid by city. U. S. citizenship required, but no residence restrictions for man to begin work. Registration as a professional engineer required. Wisconsin Retirement Fund and Social Security Benefits.

CITY PERSONNEL DEPARTMENT
404 City-County Building,
Madison 9, Wis.

CIVIL ENGINEER WANTED

by Consulting firm for work in Middle Atlantic States area. Must be graduate, at least 35, experienced in field supervision of highway construction. Some knowledge of laboratory work on soils, concrete and asphaltic mixes desirable.

Reply to:
P-7840, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

SENIOR ENGINEERS

DESIGN
AND
FIELD

FOR WORK IN AFGHANISTAN

DESIGN

Must be a graduate Engineer with several years experience in hydraulic and structural design, preferably in layout and design of irrigation and drainage systems and appurtenant structures.

FIELD

Graduate Engineer or equivalent experienced in farm irrigation systems and water management.

Salary Commensurate with Ability
Single Status
Two Year Contract
Room and Board Furnished
Vacation Allowance

Send resume with recent photo to:

MORRISON-KNUDSEN
AFGHANISTAN
INC.
120 Montgomery
San Francisco, California

GENERAL MANAGER OF CONSTRUCTION

Major New York construction firm operating in eight states desires executive to take charge of all construction and related activities. Must have proven ability to organize, supervise and coordinate the work of Construction, Purchasing and Estimating Departments, staffed by experienced and highly competent personnel. Multi-million dollar projects include high-rise apartment buildings, hospitals, defense facilities, industrial and commercial structures. $100,000,000 of work on hand. Must possess excellent business judgment and executive ability to maintain and further the firm's outstanding reputation for integrity, ability to meet production schedules, and competence. Salary commensurate with experience and ability. Require detailed resume which will be treated confidentially. Our personnel know of this advertisement.

Reply to:
P-7871, Engineering News-Record
Class. Adv. Div. P.O. Box 12, N.Y. 36, N.Y.

EMPLOYMENT OPPORTUNITIES

POSITIONS WANTED

(Continued from page 88)

Engineering Executive. Heavy industrial and civil experience; all phases of administration and management. Organize and direct large design jobs or work in consulting and exec. asst. capacities. Proposals, reports, contracts, liaison. P.E. in 3 States; NBER Certificate. PW-7748, Engineering News-Record.

2 Civil Engineers (grad. 1944) w. extensive experience in estimating, letting of sub-contracts, field supervision of multi-million dollar projects—desire to establish Division-office for General Building Contractor under a percentage of net-profit basis. PW-7743, Engineering News-Record.

Surveyor—Engineering Aide—Overseas 3 yrs experience surveying & Eng. Aide, 27 yrs old. Military service completed. Will travel anywhere. Now employed party chief & engineering Aide central Ohio pop 35,000. Non graduate, experience only. PW-7750, Engineering News-Record.

Civil Engineer, Registered, Member A.S.C.E., over 20 years experience in Highway and Expressway Design, 10 years in responsible positions, interested in making connection with consulting firm. Salary and location open. PW-7732, Engineering News-Record.

Structural engineer, 25 years experience design and supervision of design. PW-7729, Engineering News-Record.

Civil Engineer, M.ASCE, 62, degrees, state licenses, 35 years experience; design, construction, and administration; bridges, parkways, thruways, airports, harbor works, railroads, underpinning and foundations. PW-7753, Engineering News-Record.

Civil Engineer: 33, M.S. and P.E. Seven years teaching, principally Structures. Varied field experience. Currently Assoc. Prof. Seeking challenging position in Field, Office, or Education. PW-7767, Engineering News-Record.

Constructor's Engineer—indust. & commercial exp. in design office; constr. plant & field will sell, estimate or build—U.S.A. or foreign. PW-7771, Engineering News-Record.

Proj. Engr. and Constr. Mgr.—Office and Field Engr. for Consltg. Eng. Firm or Contractor. Registered grad. C.E. 20 yrs. responsible gen'l. contracting and engr'g. experience in bldg. constr. and airfields incl. estimating, contract negot'n., field supervision, surveys, new business, arch't.—owner relations. PW-7770, Engineering News-Record.

General foreman Blasting. Speaks Spanish. PW-7760, Engineering News-Record.

District Sales Manager or Sales Engineer Grad. Civil Engineer—Age 41—presently employed—8 years Sales Engineering and 7 years District Sales Management experience. All experience with leading manufacturers of steel products for sale to the construction and engineering industries. Have knowledge and judgement based on selling and management experience in these markets to skillfully handle sales to Contractors, Industrial, Consulting and Government Engineers. Resume available. PW-7821, Engineering News-Record.

Civil & Struct'l Reg'd P.E., 33, European background, M.S. (Struct'l Eng'g), 8 years U.S. experience in design & supervision of Struct'l Eng'g., U.S. citizen. Speaks: English, French, Spanish, Arabic. Desires position abroad. PW-7795, Engineering News-Record.

Supt. Gen. Contractor. Have built bridges, culverts, nike sites, TCC Units, extensive exp. in hospitals, Capehart projects, city & state housing. Self-made—hard worker—I get results! Age 36. Available May 1. PW-7790, Engineering News-Record.

Construction Engineering & Management— BSCE, 38, offers excellent experience, domestic and foreign, on heavy concrete, earthwork and hydro construction, emphasis on cost and planning. Desires responsible position with an aggressive contracting organization. PW-7861, Engineering News-Record.

Construction Engineer, 34, BSCE, 8 yrs. experience in field engineering and contract management for industrial construction. U.S. or Foreign. PW-7812, Engineering News-Record.

Accountant experience both field and home office, Joint Ventures, heavy construction, dams, roads, under ground systems air fields, industrial, water and sewer, go anywhere. PW-7833, Engineering News-Record.

POSITIONS WANTED

Association Secretary — Assistant Superintendent, Building Construction, with master's degree in labor relations, desires position with contractors association, preferably northeastern U.S. Available May 15. Best references. PW-7864, Engineering News-Record.

Top construction co. General Manager, age 42, family man. Interested in establishing your branch, or formation of subsidiary engaging primarily in large-scale construction of highways, with optional allied construction of bridges, railroads dams and bases. Presently employed at $13,000; plus participation and usual fringes. Reason for change: I believe in the future of the Gulf Coast, Florida in particular, and am interested in this section only. Personal interview at convenience of principals. PW-7857, Engineering News-Record.

Sewer Superintendent or Foreman, Italian, middle age, experienced, able, accurate, attentive and honest; would like permanent position with conscientious and ambitious contractor with the guaranty of satisfactory results in placing machines and men, in shoring, tunneling, rock blasting, etc. Will consider any size of sewerage project, as well as any difficult sewer job that is progressing unsatisfactorily. PW-7862, Engineering News-Record.

Civil Engineer, B.S., 10 years' office experience Photogrammetry, Topo., Drainage, Grading, Highway Design, Supervision, Preparation of Contract Plans. Desires connection with firm doing Highways and General Civil Engineering. N.Y.C. and vicinity. PW-7860, Engineering News-Record.

POSITIONS WANTED

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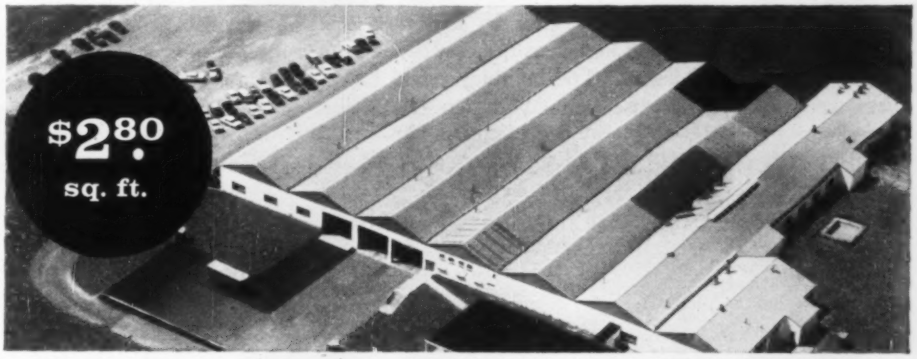

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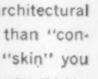

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Editorials

Trouble in Public Housing

Public housing has for its objective the provision of sanitary shelter and a decent environment for low-income families. Toward this end, cities, states and the federal government have been contributing funds generously for the construction and operation of low-rent housing throughout the U.S. It is therefore of general concern when trouble is encountered that raises the question as to whether public housing has been properly planned and designed.

Recent articles appearing in New York City newspapers call attention to criminal acts, vandalism and juvenile delinquency in this particular city's public housing projects. They point out, as one unpleasant example, that elevators are used as toilets. And they give the impression that public housing merely replaces low slum buildings with tall ones. Close reading, however, indicates that relatively few of the residents have been involved in improper activities, and other available facts show that New York City in general has been successful in meeting the primary objectives of public housing.

The question remains, though, could these housing projects have been constructed differently to avoid current troubles?

Since New York's projects consist principally of clusters of tall apartment buildings—some over 20 stories high—and much of the trouble may be attributed to the difficulty of controlling high-density population, the answer could be affirmative: The buildings could have been kept low, to decrease population density. Also, there would then be no elevators to befoul. However, high land costs preclude this solution in New York.

Perhaps, low-rent, low buildings would be practical if the land could be obtained with the use of Title I of the Federal Housing Act. (Under Title I, the federal government pays two-thirds of the difference between the cost of purchasing and the resale price of land obtained for slum clearance.) But New York would have to change its policy to permit Title I to be applied to public housing as some cities have done.

Another possible solution—one New York now is trying out—is to limit the size of each project. At present, New York's public housing is concentrated on superblocks, covering on the average about six normal city blocks. A two-block site might be more manageable; this remains to be seen.

Some opponents of public housing have claimed that low-rent housing can be obtained more economically by rehabilitating existing rundown dwellings. This has been tried in some cities, and New York hopes to embark on a $150 million urban-renewal of this type shortly (see p. 21). But in the past, where New York has tried remodeling old tenements, the results have been unsatisfactory both from sociological and economic viewpoints, because of the fundamentally unsound condition of the structures and the blighted neighborhood.

Aside from project size (and individual building height) there appears to be little that architecture and engineering can do to ease the present problems of the New York City Housing Authority, which is now responsible for 86 projects, with 99,000 occupied units and about 375,000 tenants. Nearly all the troubles are more closely correlated with tenant selection and eviction limitations set by law, insufficient policing and inadequate tenant education. Improvements in these areas of social science would go a long way toward abolishing the troubles plaguing the New York City Housing Authority and similar agencies in other cities.

Good Bill Could Be Better

A bill before Congress calling for financial reimbursement by the federal government for flood control, navigation, fish and wildlife and irrigation features of local municipal and industrial water supply projects is an excellent idea—as far as it goes.

Introduced by California Congressman Clair Engle and referred to the House Public Works Committee, the bill would allow the federal government to pay for (in the form of a loan in the case of irrigation) those benefits of local projects which are traditionally provided by the federal government. The bill provides that if the Secretary of the Army or the Secretary of the Interior find a non-federal organization reimbursement claim justified, they can then negotiate, with Congressional approval, firm reimbursement contracts.

There is no element of "giveaway" in the proposal, and in fact the program envisioned would tend to reduce the federal investment by encouraging local agencies to build and help pay for multipurpose water projects.

It is in its definition of the type of project and the nature of the local "organization" eligible for reimbursement that the Engle bill falls short. Apparently reflecting the specific California situation, the bill limits the projects primarily to those supplying municipal and industrial water and limits the organizations to non-profit public types.

This legislation could well have been made broader so that qualified projects would include all types of water resources developments, including hydroelectric power. Private builders then also would be eligible for reimbursement. The need for this broader legislation is evident in the Pacific Northwest where private hydroelectric projects could be made so much more comprehensive if the builders were reimbursed for flood control, navigation and—most important—downstream power benefits of their stored water.

On the theory that half a loaf is better than none, the Engle bill deserves the support of the construction industry. Could it be broadened to cover private projects that confer federal benefits, so much the better.

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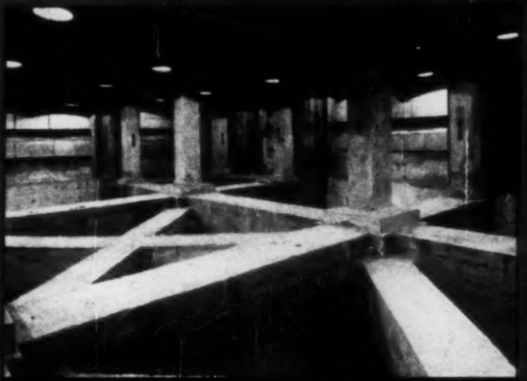

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a

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c

d

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a. Applying a medium-curing Texaco Cutback Asphalt to windrow of soil.

b. Pulvi-mixer and motor grader blend Cutback Asphalt and soil.

c. Compacting Texaco-treated soil with multi-wheel and tandem rollers.

d. Completed soil stabilization project in Wadena County, Minn.

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